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GEI Consultants

Geotechnical
Environmental
Water Resources
Engineering

April 3, 2014
Project 04516-3

Bureau of Waste Site Cleanup
Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

REF
354,
353
GEI

Dear Sir or Madam:

Re: Release Abatement Measure Status Report No. 1
34 Knowlton Street
50 Tufts Street Site
Somerville, Massachusetts
MassDEP RTN 3-23246

On behalf of Sterling Construction & Development LLC (Sterling) of Chelsea, Massachusetts, GEI Consultants, Inc. (GEI) is submitting this Release Abatement Measure (RAM) Status Report No. 1 for response actions associated with the construction of a two-family residential building at 34 Knowlton Street in Somerville, Massachusetts (the Property; Fig. 1 and Fig. 2). The Property is located on a portion of the Massachusetts Department of Environmental Protection (MassDEP)-listed disposal site identified as 50 Tufts Street and assigned Release Tracking Number (RTN) 3-23246 (the Site). This report covers work performed between December 4, 2013, when the RAM Plan was submitted to MassDEP, and March 21, 2014.

Response actions include installation of a vapor barrier and a sub-slab ventilation piping network (piping network) beneath the building, and management of potentially contaminated soil. The building construction and associated response actions under this RAM Plan are being conducted by Sterling, the current property owner.

This RAM Status Report was prepared in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0445). The MassDEP RAM Transmittal Form (BWSC106) is being submitted electronically via eDEP, and a copy is in Appendix A.

GEI will provide copies of this RAM Status Report No. 1 to the local public document repositories that were established for the Site at the Somerville Central Public Library and at the City of Somerville Clerk's Office. GEI will also provide an electronic version of this report to the City for posting to the City's web site.

1. Background

1.1 Site Description

A release of chlorinated volatile organic compounds (VOCs) to soil and groundwater on the 50 Tufts Street property was first reported to MassDEP in 2002. Numerous studies have been conducted at the Site, and response actions are currently being conducted as part of Phase V of the MCP process.

Chlorinated VOCs generally have not been detected in soil beyond the limits of the 50 Tufts Street property. Chlorinated VOCs have been detected in groundwater beyond the 50 Tufts Street property boundaries. Through studies conducted at the Site, the extent of dissolved concentrations of chlorinated VOCs in groundwater has been determined, and the Site boundary has been delineated. The Property is located within the boundaries of the Site (Fig. 2).

The property is located approximately 350 feet northeast of the 50 Tufts Street property. It is located within a commercial/residential zoning district and fronts residential property to the south and west, Knowlton Street to the east, and the Michael E. Capuano Early Childhood Center (Capuano Center) to the north. The Property is currently an active construction site of a 2-family residential building.

1.2 Release Description

Chlorinated VOCs generally have not been detected in soil beyond the limits of the 50 Tufts Street property. Chlorinated VOCs have also not been detected above laboratory reporting limits in the five soil samples collected between 0 to 12 feet from borings MW112 and MW112A, each located within 30 feet of the Property. Based on these analytical results and the anticipated depth of soil excavation during building construction, it is unlikely that VOC-contaminated soil will be encountered during the construction project.

Chlorinated VOCs have been detected in groundwater beyond the 50 Tufts Street property boundaries. Chlorinated VOCs have also been detected above Method 1 GW-2 standards in groundwater samples collected from MW112A, located approximately 30 feet east of the Property within Knowlton Street. Based on the anticipated depth of soil excavation during the building construction, it is unlikely that groundwater will be encountered. However, the concentrations of chlorinated VOCs in groundwater indicate the potential for vapor intrusion into the new building after it is constructed. Therefore, the RAM Plan incorporated a vapor barrier and a sub-slab ventilation piping network into the building construction.

1.3 Project Description

The Property development includes construction of a two-family residential building. The soil excavation and building construction is being performed by Sterling, the current property owner. The total area of disturbance is approximately 1,200 square feet (ft^2). The building is being constructed with a basement that is partially above grade. A vapor barrier and sub-slab ventilation piping network is being installed beneath the building foundation during construction.

On December 4, 2013, GEI submitted a RAM Plan to MassDEP for the installation of a vapor barrier and a sub-slab ventilation piping network (piping network) beneath the building, and management of potentially contaminated soil.

2. Status of Response Operations and Significant New Site Information (310 CMR 40.0445[2][a and b])

Activities conducted between December 4, 2013 and March 21, 2014 as part of construction are described below.

2.1 Soil Excavation and Disposal

On December 10 and 31, 2013, Tufts Construction, Inc. (Tufts Construction) of Medford, Massachusetts advanced test pits in preparation for collection of soil samples for disposal characterization purposes. On these dates, GEI personnel collected soil samples and submitted them to Accutest Laboratories, Inc. (Accutest) of Marlborough, Massachusetts for chemical testing of VOCs, extractable petroleum hydrocarbons (EPH), total petroleum hydrocarbons (TPH), semi-volatile

organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, TCLP lead, pesticides, herbicides, specific conductance, oxidation reduction ignitability, pH and reactive cyanide, and sulfide. The chemical testing results are summarized in Table 1. The laboratory data reports are in Appendix B.

No chlorinated VOCs were detected in the soil samples collected at the Property. Some PAHs were detected in the samples above MCP reportable concentrations (RCS-1); however, ash, clinkers, and brick fragments were observed in the test pits during sample collection. Test pit logs are included in Appendix C. The PAHs detected in soil samples are considered to be attributable to urban fill placed at the Property, and not a release-related condition. In accordance with the MCP (310 CMR 40.0317[9]), the PAHs do not constitute a reportable condition.

During this reporting period, soil excavation to support construction at the Property was completed. Between December 2013 and January 2014, a total of 444.07 tons of excess soil was transported off-site for disposal to CPRC Group, in Scarborough, Maine. As the soil removed from the Property was classified as non-remediation waste, it was transported under a Material Shipping Record (MSR). We are awaiting copies of the final MSRs from Sterling. The MSRs will be submitted with the next regulatory submittal (either RAM Status Report No. 2 or the RAM Completion Report).

The soil was loaded directly onto trucks and transported off-site for disposal at the appropriate receiving facility. The soil excavation has been completed, and there are no soil stockpiles currently at the Property. In addition, as expected based on subsurface information collected in the vicinity of the Property, groundwater was not encountered during the excavation.

2.2 Groundwater Management

Groundwater was not encountered during the excavation; therefore, no construction dewatering has been conducted at the Property as part of the RAM activities to date.

2.3 Vapor Barrier and Piping Network Installation

During construction, the sub-slab piping network and vapor barrier were installed to the specification outlined in the RAM Plan. The piping network consists of 4-inch-diameter perforated polyvinyl chloride (PVC) piping embedded in 12 inches of washed stone. The perforated piping was connected to a solid lateral pipe manifold and a solid riser pipe that is routed through the building envelope, terminating at the roof line. The vapor barrier is a 20-mil polyethylene and resin-based membrane (installed in 2 layers resulting in 40 mil installation thickness) using overlapping seams and pipe boots for pipe penetrations. Fig. 3 shows the piping layout.

Following initial installation of the vapor barrier, we performed a smoke test to evaluate the effectiveness of the barrier prior to the pouring of concrete for the basement floor. The vapor barrier passed the smoke test, and a summary memorandum is in Appendix D.

2.4 Confirmatory Indoor Air Sampling

The foundation and exterior building construction has been completed, including the installation of the vapor barrier and ventilation piping to the roof. However, interior construction is ongoing. Following completion of interior construction, we will perform one round of confirmatory indoor air testing to demonstrate that the vapor intrusion mitigation measures are effective, and confirm that compounds of concern (COCs) are not present in indoor air at concentrations that would not constitute a condition of No Significant Risk (NSR) to building occupants. If the initial confirmatory indoor air testing demonstrates that the vapor intrusion mitigation measures are effective, we will submit a RAM

Completion Report. Additional rounds of confirmatory indoor air testing will be conducted in subsequent calendar quarters as part of Phase V activities for the 50 Tufts Street Site. Construction at the Property and initial indoor air testing is expected to be completed in spring 2014.

3. LSP Opinion (310 CMR 40.0445[2][e]

It is GEI's opinion that actions described in this status report have been performed in accordance with the RAM Plan.

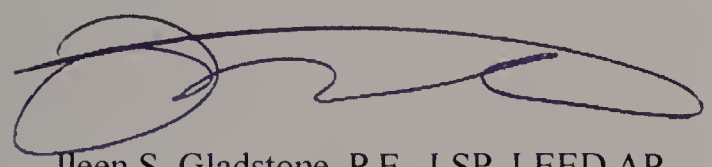
4. Limitations

This RAM Status Report No. 1 was prepared for the use of Sterling and UniFirst. The conclusions presented in this report are based solely on the information contained or referenced in this report. Additional quantitative information regarding the Site that was not available to us may result in a modification of the findings above. The report has been prepared in accordance with generally accepted geohydrological practices. No warranty, expressed or implied, is made.

Please contact me at 781-721-4012 or igladstone@geiconsultants.com, if you have any questions.

Sincerely,

GEI CONSULTANTS, INC.



Ileen S. Gladstone, P.E., LSP, LEED AP
Vice President

CMM/JDR/ISG:csh
Enclosures
c: Richard Arnone, Sterling Construction & Development LLC
Timothy Cosgrave, UniFirst Corporation
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Engineering

Table 1. Chemical Testing Results - Disposal Characterization Samples
Release Abatement Measure Status Report No.1
34 Knowlton Street
Somerville, Massachusetts

Analyte	Method	Unit	MassDEP Background Levels (Fill)	MCP RCS-1 Criteria	Sample Location: / Sample ID: / Sample Date: / Sample Depth (feet): 34 Knowlton TP102-S2 12/10/13 0-4	34 Knowlton COMP 12/10/13 0-4	34 Knowlton DISP-A 12/31/13 0-4	34 Knowlton DISP-COMP 12/31/2013 0-4
Volatile Organic Compounds (VOCs)	8260B	mg/kg				NT		NT
Benzene			NS	40	< 0.024		0.00059	
Total VOCs			NS	NS	ND		0.00059	
Extractable Petroleum Hydrocarbons (EPH)	MADEP EPH	mg/kg			NT		NT	
C9-C18 Aliphatics			NS	1,000		< 11		< 11
C19-C36 Aliphatics			NS	3,000		23.7 F+		< 11
C11-C12 Aromatics			NS	1,000		188 F+, G		42.3
Total Petroleum Hydrocarbons (TPH)	8015	mg/kg			NT		NT	NT
TPH-GRO			NS	1,000		< 6.6		
TPH-DRO			NS	1,000		194		
Semi-Volatile Organic Compounds (SVOCs)					NT		NT	
Acenaphthene			2	4		6.53		0.559 J
Acenaphthylene			1	1		8.13		0.0674 J
Anthracene			4	1,000		23.3		1.42
Benz[a]anthracene			9	7		36.9		6.29
Benzo[a]pyrene			7	2		31.7		5.8
Benzo[b]fluoranthene			8	7		26.6		3.61
Benzo[g,h,i]perylene			3	1,000		20.6		3.25
Benzo[k]fluoranthene			4	70		20		4.39
Chrysene			7	70		33.8		6.56
Dibenzofuran			NS	100		6.36		< 0.61
Dibenz[a,h]anthracene			1	0.7		6.46		0.914
Fluoranthene			10	1,000		86.1		9.51
Fluorene			2	1,000		8.32		0.273 J
Indeno[1,2,3-cd]pyrene			3	7		19.4		2.57
2-Methylnaphthalene			1	0.7		2.05		< 0.61
Naphthalene			1	4		1.92		< 0.61
Phenanthrene			20	10		77.4		6.61
Pyrene			20	1,000		73.3		15.6
Total SVOCs			NS	NS		488.87		67.42
Polychlorinated Biphenyls (PCBs)	8082	mg/kg			NT		NT	
Total PCBs			NS	2		ND		ND
Total Metals		mg/kg			NT		NT	
Antimony	6010C		7	20		0.54 J		NT
Arsenic	6010C		20	20		9.9		10.1
Barium	6010C		50	1,000		64.3		73.9
Beryllium	6010C		0.9	100		0.63		NT
Cadmium	6010C		3	2		0.5		< 0.41
Chromium	6010C		40	1,000		19.5		25
Hexavalent Chromium	7196A		40	30		<0.46		0.62
Lead	6010C		600	300		131		70.6
Mercury	7471B		1	20		0.31		0.23
Nickel	6010C		30	20		13.5		NT
Selenium	6010C		1	400		< 0.36		< 1.0
Silver	6010C		5	100		< 0.13		< 0.51
Thallium	6010C		5	8		< 0.14		NT
Vanadium	6010C		30	600		28.2		39.8
Zinc	6010C		300	2500		105		NT
Metals, TCLP		mg/L			NT		NT	NT
Lead	6010C		NS	NS		0.073		
Herbicides	3550B	mg/kg			NT			NT
2,4-D			NS	100		0.0106 G, J		
2,4,5-TP (Silvex)			NS	100		< 0.023		
2,4,5-T			NS	100		< 0.023		
Pesticides	3546	mg/kg	NS	NS	NT	ND	NT	NT
Others					NT		NT	
Specific Conductance	120.1M	umhos/cm	NS	NS		610		2.3
pH	9045	SU	NS	NS		7.4 A		7.4
Oxidation Reduction Potential	1498-76M	mv	NS	NS		377		436
Reactive Cyanide	7.3	mg/kg	NS	NS		< 1.8		< 1.8
Reactive Sulfide	7.3	mg/kg	NS	NS		< 58		< 61
Ignitability	1020	deg F	NS	NS		> 230		> 230
Percent Solids	2540B Mod	%	NS	NS		85.5		81.7

General Notes:

1. In general, analytes detected in at least one sample are reported here. For a complete list of analytes see the laboratory data sheets.
2. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
3. MassDEP Background Levels are from MassDEP Technical Update "Background Levels of PAHs and Metals in Soil" dated May 23, 2002.
4. NS = No standard or criteria has been established for this analyte.
5. NT = The sample was not tested for this analyte.
6. ND = Not detected
7. Soil samples for VOC analysis were preserved in the field with methanol.
8. mg/kg = milligrams per kilogram
9. umhos/cm = micromhos per centimeter
10. SU = standard units
11. mv = millivolts
12. deg F = degrees Fahrenheit

Qualifying Notes:

A The result is estimated due to exceedence of holding time criteria.
F+ The result has a high bias due to matrix spike recvery above upper control limits.
G The result is estimated due to duplicate precision outside control limits.
J The reported result is below the laboratory reporting limit and is estimated.

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Geotechnical
Environmental
Water Resources
Ecological

0 1000 2000 4000 6000

SCALE, FEET

This Image provided by MassGIS is from U.S.G.S.
Topographic 7.5 X 15 Minute Series
Boston North, MA Quadrangle, 1985.
Datum is National Geodetic Vertical Datum (NGVD).
Contour Interval is 3 Meters.

MASSACHUSETTS
QUADRANGLE LOCATION

Release Abatement Measure (RAM) Status Report No. 1 50 Tufts Street Somerville, Massachusetts	GEI Consultants	SITE LOCATION MAP
UniFirst Corporation Wilmington, Massachusetts	Project 04516-3	April 2014 Fig. 1

N:\04516\#Drafting\04516-3\RAM Status Report No 1\045163 RAM SR 1 Fig 1

LEGEND:

- MONITORING WELL WITH SOIL VAPOR SAMPLE PORT INSTALLED BY GEI, JANUARY 2007 - JANUARY 2008
- MONITORING WELL INSTALLED BY SANBORN HEAD ASSOCIATES, 2002
- MONITORING WELL INSTALLED BY GEOINSIGHT, JUNE 2004
- SOIL BORING ADVANCED BY GEOINSIGHT, AUGUST 2004
- MONITORING WELL INSTALLED BY GEI, MAY 2006
- DRIVEN POINT MONITORING WELL INSTALLED BY MADEP, MAY 2007
- MONITORING WELL INSTALLED PREVIOUSLY, DATE UNKNOWN
- PREVIOUSLY INSTALLED IRRIGATION WELL
- SOIL SAMPLE COLLECTED PRIOR TO MONITORING WELL INSTALLATION
- 84 STREET ADDRESS

MBTA = MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

- DISPOSAL SITE BOUNDARY (DASHED WHERE INFERRED)
- INFERRED EXTENT OF PCE CONCENTRATION IN SHALLOW GROUNDWATER GREATER THAN OR EQUAL TO 50 MICROGRAMS PER LITER (µg/l)
- PORTION OF SITE SUBJECT TO THE RAM PLAN

GENERAL NOTES:

1. HORIZONTAL CONTROL FOR THIS PLAN WAS ESTABLISHED BY GPS AND IS BASED ON THE NORTH AMERICAN DATUM OF 1983.
2. STREET AND PROPERTY LINES BASED ON SOMERVILLE ASSESSORS' MAPS AND ARE BEST FIT RELATIVE TO THE LOCATION OF THE 50 TUFTS ST. BUILDING.
3. MONITORING WELL LOCATIONS WERE ESTABLISHED BASED ON THE GROUND SURVEYS BY BSC GROUP, INC.

Release Abatement Measure (RAM) Status Report No. 1
50 Tufts Street
Somerville, Massachusetts

UniFirst Corporation
Wilmington, Massachusetts

GEI Consultants

34 KNOWLTON STREET - PORTION OF DISPOSAL SITE SUBJECT TO RAM

Project 04516-3 | April 2014 | Fig. 2

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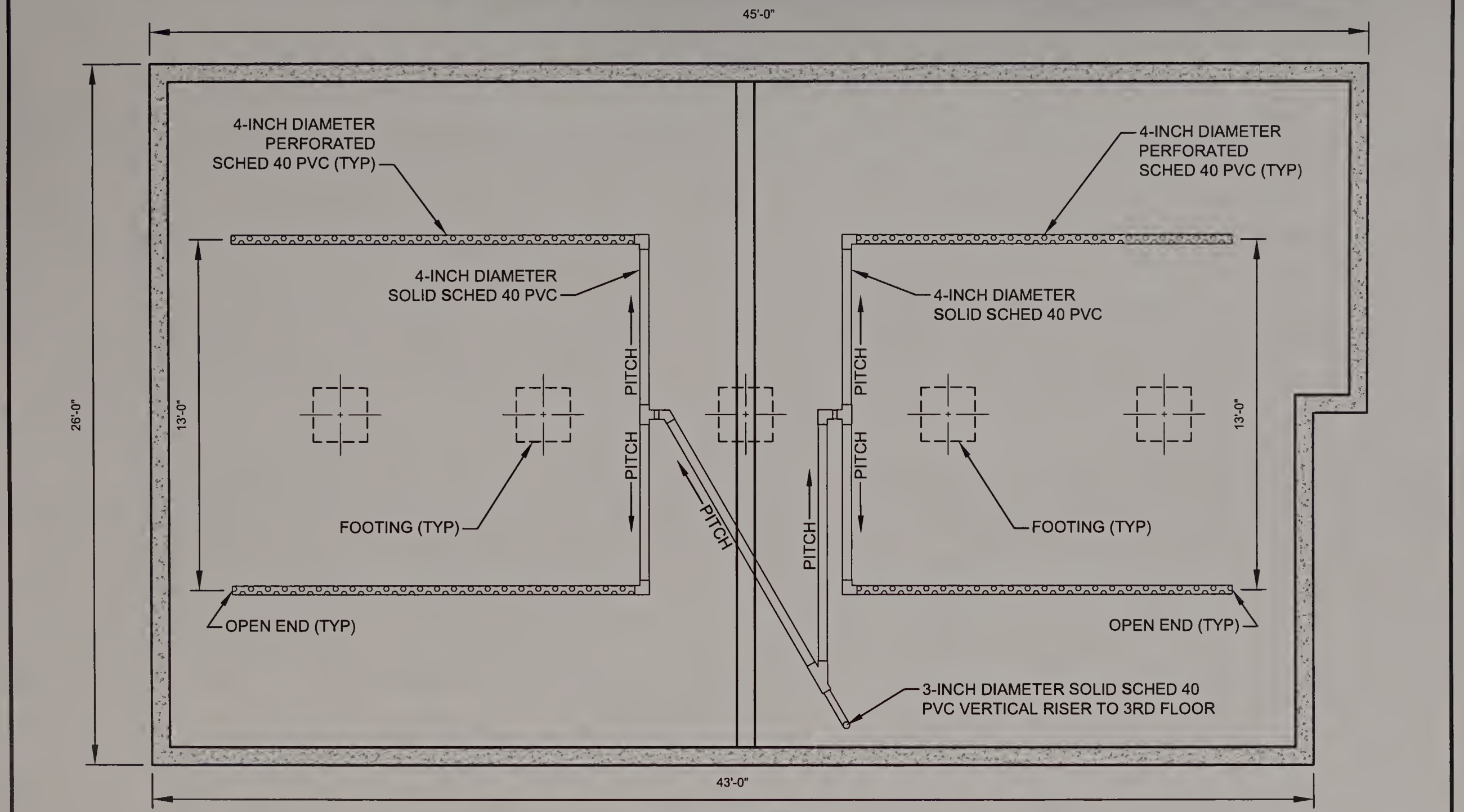

FULL BASEMENT

NOT TO SCALE

NOTES:

1. SOLID LATERAL PIPE CAN BE LOCATED PROXIMATE TO VERTICAL UTILITY

Release Abatement Measure (RAM) Status Report No. 1 50 Tufts Street Somerville, Massachusetts	GEI Consultants	FINAL VAPOR MITIGATION DESIGN 34 Knowlton Street
UniFirst Corporation Wilmington, Massachusetts	Project 04516-3	April 2014 Fig. 3

N:\04516\#Drafting\04516-3\RAM Status Report No 1\045163 RAM 02 34 Knowlton

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Appendix A

MassDEP Transmittal Form

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

Release Tracking Number: 3 - 23246

A. SITE LOCATION:

1. Site Name/Location Aid: 50 TUFTS ST & PROP ACROSS THE ST

2. Street Address: 50 TUFTS ST

3. City/Town: SOMERVILLE 4. Zip Code: 021454129

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.

☑ a. Tier I ☐ b. Tier ID ☐ c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial RAM Plan (if previously submitted): 12/4/2013 (mm/dd/yyyy)

☐ 2. Submit an **Initial Release Abatement Measure (RAM) Plan**.

☐ a. Check here if the RAM is being conducted as part of the construction of a permanent structure. If checked, you must specify what type of permanent structure is to be erected in or in the immediate vicinity of the area where the RAM is to be conducted.

b. Specify type of permanent structure: (check all that apply) ☐ i. School ☐ ii. Residential ☐ iii. Commercial

☐ iv. Industrial ☐ v. Other Specify: _____

☐ 3. Submit a **Modified RAM Plan** of a previously submitted RAM Plan.

☑ 4. Submit a **RAM Status Report**.

☐ 5. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP, concurrent with a RAM Status Report.)

a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report

b. Frequency of Submittal:

☐ i. A Remedial Monitoring Report(s) submitted every six months, concurrent with a RAM Status Report.

☐ ii. A Remedial Monitoring Report(s) submitted annually, concurrent with a RAM Status Report.

c. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC106A, RAM Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☐ 6. Submit a **RAM Completion Statement**.

☐ 7. Submit a **Revised RAM Completion Statement**.

8. Provide Additional RTNs:

☐ a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal. ☐ - ☐ ☐ - ☐

☐ 9. Submit a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).

(All sections of this transmittal form must be filled out unless otherwise noted above)

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

Release Tracking Number
3 - 23246

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:

1. Media Impacted and Receptors Affected: (check all that apply)

☐ a. Paved Surface ☐ b. Basement ☐ c. School
☐ d. Public Water Supply ☐ e. Surface Water ☐ f. Zone 2 ☐ g. Private Well ☑ h. Residence ☐ i. Soil
☑ j. Ground Water ☐ k. Sediments ☐ l. Wetland ☐ m. Storm Drain ☑ n. Indoor Air ☐ o. Air
☐ p. Soil Gas ☐ q. Sub-Slab Soil Gas ☐ r. Critical Exposure Pathway ☐ s. NAPL ☐ t. Unknown
☐ u. Others Specify: _____

2. Sources of the Release or TOR: (check all that apply)

☐ a. Transformer ☐ b. Fuel Tank ☑ c. Pipe
☐ d. OHM Delivery ☐ e. AST ☑ f. Drums ☐ g. Tanker Truck ☑ h. Hose ☐ i. Line
☐ j. UST Describe: _____ ☐ k. Vehicle ☐ l. Boat/Vessel
☐ m. Unknown ☐ n. Other: _____

3. Type of Release or TOR: (check all that apply)

☐ a. Dumping ☐ b. Fire ☐ c. AST Removal ☐ d. Overfill
☐ e. Rupture ☐ f. Vehicle Accident ☐ g. Leak ☑ h. Spill ☐ i. Test Failure ☐ j. TOR Only
☐ k. UST Removal Describe: _____
☐ l. Unknown ☐ m. Other: _____

4. Identify Oils and Hazardous Materials Released: (check all that apply)

☐ a. Oils ☑ b. Chlorinated Solvents
☐ c. Heavy Metals ☐ d. Others Specify: _____

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

☐ 1. Assessment and/or Monitoring Only
☐ 2. Temporary Covers or Caps
☐ 3. Deployment of Absorbent or Containment Materials
☐ 4. Temporary Water Supplies
☑ 5. Structure Venting System/HVAC Modification System
☐ 6. Temporary Evacuation or Relocation of Residents
☐ 7. Product or NAPL Recovery
☐ 8. Fencing and Sign Posting
☐ 9. Groundwater Treatment Systems
☐ 10. Soil Vapor Extraction
☐ 11. Remedial Additives
☐ 12. Air Sparging
☐ 13. Active Exposure Pathway Mitigation System
☐ 14. Passive Exposure Pathway Mitigation System
☐ 15. Monitored Natural Attenuation
☐ 16. In-Situ Chemical Oxidation

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

Release Tracking Number: 3 - 23246

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☑ 17. Excavation of Contaminated Soils

☑ a. Re-use, Recycling or Treatment ☐ i. On Site Estimated volume in cubic yards _____

☑ ii. Off Site Estimated volume in cubic yards 261.21

iia. Receiving Facility: CPRC GROUP Town: SCARBOROUGH State: ME

iib. Receiving Facility: _____ Town: _____ State: _____

iii. Describe: OFFSITE DISPOSAL OF NON-REMEDIATION WASTE

☐ b. Store ☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

iia. Receiving Facility: _____ Town: _____ State: _____

iib. Receiving Facility: _____ Town: _____ State: _____

☐ c. Landfill ☐ i. Cover Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ ii. Disposal Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ 18. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☐ 19. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☐ 20. Other Response Actions:

Describe: _____

☐ 21. Use of Innovative Technologies:

Describe: _____

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

Release Tracking Number

3 - 23246

E. LSP SIGNATURE AND STAMP :

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a **Release Abatement Measure Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** and/or **Remedial Monitoring Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply (ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Completion Statement** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal:

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:	9719				
2. First Name:	ILEEN S	3. Last Name:	GLADSTONE		
4. Telephone:	7817214012	5. Ext.:		6. Email:	
7. Signature:	ILEEN S GLADSTONE				
8. Date:	4/4/2014 (mm/dd/yyyy)	9. LSP Stamp:			

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

Release Tracking Number: 3 - 23246

F. PERSON UNDERTAKING RAM:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: STERLING CONSTRUCTION AND DEVELOPMENT LLC

3. Contact First Name: RICHARD 4. Last Name: ARNONE

5. Street: 285 COMMANDANTS WAY SUITE 12 6. Title:

7. City/Town: CHELSEA 8. State: MA 9. ZIP Code: 021500000

10. Telephone: 7819537112 11. Ext.: 12. Email:

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING RAM:

☐ Check here to change relationship

☑ 1. RP or PRP ☑ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify:

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking RAM Specify Relationship:

H. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (BWSC108).

☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☑ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of a Release Abatement Measure.

☐ 4. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to bwsc.edep@state.ma.us.

☐ 5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.

☑ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

Release Tracking Number

3 - 23246

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, RICHARD ARNONE , attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: RICHARD ARNONE (Signature) 3. Title:

4. For: STERLING CONSTRUCTION AND DEVELOPMENT LLC (Name of person or entity recorded in Section F) 5. Date: 4/4/2014 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street:

8. City/Town: 9. State: 10. ZIP Code:

11. Telephone: 12. Ext.: 13. Email:

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE

Date Stamp (DEP USE ONLY:)

Received by DEP on
4/4/2014 8:54:33 AM

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Transaction Overview Trans# 642016 ID# 3-23246 BWSC106 Release Abatement Measure Transmittal Form

Summary & Receipt

Print Receipt Exit

Your submission is complete. Thank you for using eDEP's online reporting system. Select My eDEP to see a list of your transactions. Click Print Receipt to save a copy of this receipt for your records.

DEP Transaction ID: 642016
Date and Time Submitted: 4/4/2014 8:54:33 AM
Other Email :

Form Name: BWSC106 Release Abatement Measure Transmittal Form

RTN: 3-23246
Location: 50 TUFTS ST & PROP ACROSS THE ST
Address: 50 TUFTS ST, SOMERVILLE, 021454129

Person Making Submittal
STERLING CONSTRUCTION AND DEVELOPMENT LLC
RICHARD ARNONE
285 COMMANDANTS WAY SUITE 12
CHELSEA, MA 021500000

LSP
LSP #: 9719
LSP Name: ILEEN S GLADSTONE

Person Making Certification
STERLING CONSTRUCTION AND DEVELOPMENT LLC
Richard Arnone

Ancillary Document Uploaded/Mailed
BWSC-106 Sec.B Q.4 - RAM Status Report - Uploaded (34 Knowlton RAM SR 1 2014-04-03.pdf)

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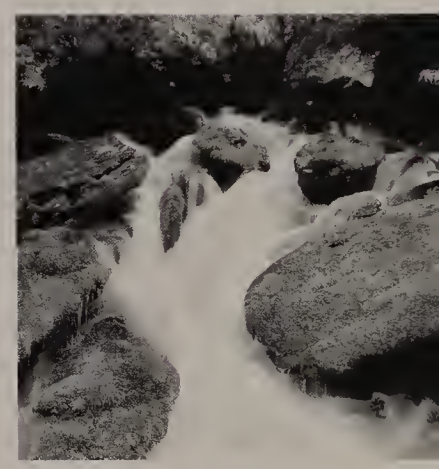
GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological



Appendix B

Laboratory Data

New England ACCUTEST LABORATORIES

12/30/13

Technical Report for

GEI Consultants, Inc.

GEI Tufts Street Somerville MA

045163

Accutest Job Number: MC26999

Sampling Date: 12/10/13

Report to:

GEI Consultants, Inc.

jroman@geiconsultants.com
labdata@geiconsultants.com; smoseley@geiconsultants.com
ATTN: Joe Roman

Total number of pages in report: **80**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Reza Tand
Lab Director

Client Service contact: Frank DAgostino 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) DoD ELAP (L-A-B L2235)

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Test results relate only to samples analyzed.

Accutest Laboratories is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.

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Accutest Laboratories

Sample Summary

GEI Consultants, Inc.

Job No: MC26999

GEI Tufts Street Somerville MA
Project No: 045163

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
MC26999-1	12/10/13	13:50	MLK	12/10/13	SO	Soil	045163-34KNOWLTON-TP102-S2
MC26999-2	12/10/13	13:55	MLK	12/10/13	SO	Soil	145163-34KNOWLTON-COMP

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GEI Consultants, Inc. **Job No** MC26999

Site: GEI Tufts Street Somerville MA **Report Date** 12/30/2013 1:55:08 PM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 12/10/2013 and were received at Accutest on 12/10/2013 properly preserved, at 0.2 Deg. C and intact. These Samples received an Accutest job number of MC26999. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260C

Matrix: SO **Batch ID:** MSG5172

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC27024-1MS, MC27024-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- BS/BSD Recovery(s) for Bromomethane are outside control limits. Outside control limits. Blank Spike meets program technical requirements.
- MS/MSD Recovery(s) for Bromomethane, Chloroethane, Vinyl chloride are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Continuing calibration check standard MSG5172-CC5138 for bromomethane, ethyl ether, bromoform exceed 20% Difference. This check standard met MCP criteria.
- The response factor (RF) at low point for Acetone (0.08), for 2-Butanone and at average point (0.062) and (0.055) in the initial calibration MSG5138-ICC5138 are less than the required RF of 0.1 as noted in Table 4 of SW846 8260C.
- BSD Recovery(s) for Chloroethane, Vinyl chloride: Outside control limits. Blank Spike meets program technical requirements.

Extractables by GCMS By Method SW846 8270D

Matrix: SO **Batch ID:** OP36150

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26681-15MS, MC26681-15MSD were used as the QC samples indicated.
- BS/BSD Recovery(s) for Hexachlorocyclopentadiene are outside control limits. Outside control limits. Associated samples are non-detect for this compound.
- MS/MSD Recovery(s) for 2,4-Dinitrophenol, Benzoic acid, Hexachlorocyclopentadiene, Pentachlorophenol are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Aniline are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for Hexachlorocyclopentadiene are outside control limits for sample OP36150-MSD1. High RPD due to possible matrix interference and/or sample non-homogeneity.
- Initial calibration verification MSW729-ICV729 for Aniline, bis(2-chloroisopropyl)ether exceed 30% Difference.

Extractables by GC By Method MADEP EPH REV 1.1

Matrix: SO	Batch ID: OP36155

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) MC26999-2MS, MC26999-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for C11-C22 Aromatics (Unadj.) are outside control limits. Outside control limits due to possible matrix interference.
- Matrix Spike Duplicate Recovery(s) for C19-C36 Aliphatics are outside control limits. Outside control limits due to possible matrix interference.
- RPD(s) for MSD for C11-C22 Aromatics (Unadj.), C19-C36 Aliphatics are outside control limits for sample OP36155-MSD. Outside control limits due to possible matrix interference.

Extractables by GC By Method SW846 8082

Matrix: SO	Batch ID: OP36154

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26999-2MS, MC26999-2MSD, OP36154-MSMSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: SO	Batch ID: MP22240

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26975-4MS, MC26975-4MSD, MC26975-4SDL were used as the QC samples for metals.
- MS/MSD Recovery(s) for Antimony are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- RPD(s) for Serial Dilution for Antimony, Arsenic are outside control limits for sample MP22240-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 7471B

Matrix: SO	Batch ID: MP22242

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26741-6MS, MC26741-6MSD were used as the QC samples for metals.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO	Batch ID: GN45439

- Sample(s) MC26999-2DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method EPA 120.1M

Matrix: SO	Batch ID: GN45437

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26999-2DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method SM21 2540 B MOD.

Matrix: SO	Batch ID: GN45445

- Sample(s) MC27002-23DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 1020

Matrix: SO	Batch ID: GN45344

- Sample(s) MC26712-1DUP were used as the QC samples for Ignitability (Flashpoint).

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO	Batch ID: GP17020

- All samples were distilled and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26999-2DUP, MC26999-2MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 9045D

Matrix: SO	Batch ID: GN45435

- Sample(s) MC26956-1DUP were used as the QC samples for pH.

Wet Chemistry By Method SW846 CHAP7

Matrix: SO	Batch ID: GP17008

- All samples were distilled and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26915-1DUP, MC26915-1MS were used as the QC samples for Cyanide Reactivity.

Matrix: SO	Batch ID: GP17009

- All samples were distilled and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26915-1DUP, MC26915-1MS were used as the QC samples for Sulfide Reactivity.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC26999).

Summary of Hits

Job Number: MC26999
Account: GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA
Collected: 12/10/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC26999-1	**045163-34KNOWLTON-TP102-S2**					
No hits reported in this sample.						
MC26999-2	**145163-34KNOWLTON-COMP**					
3&4-Methylphenol		191 J	2900	140	ug/kg	SW846 8270D
Acenaphthene		6530	580	78	ug/kg	SW846 8270D
Acenaphthylene		8130	580	58	ug/kg	SW846 8270D
Anthracene		23300	580	70	ug/kg	SW846 8270D
Benzo(a)anthracene		36900	5800	750	ug/kg	SW846 8270D
Benzo(a)pyrene		31700	5800	620	ug/kg	SW846 8270D
Benzo(b)fluoranthene		26600	5800	720	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		20600	580	58	ug/kg	SW846 8270D
Benzo(k)fluoranthene		20000	580	88	ug/kg	SW846 8270D
Chrysene		33800	5800	720	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		6460	580	69	ug/kg	SW846 8270D
Dibenzofuran		6360	580	80	ug/kg	SW846 8270D
Fluoranthene		86100	5800	790	ug/kg	SW846 8270D
Fluorene		8320	580	77	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		19400	580	64	ug/kg	SW846 8270D
2-Methylnaphthalene		2050	580	74	ug/kg	SW846 8270D
Naphthalene		1920	580	93	ug/kg	SW846 8270D
Phenanthrene		77400	5800	780	ug/kg	SW846 8270D
Pyrene		73300	5800	680	ug/kg	SW846 8270D
C11-C22 Aromatics (Unadj.)		278000	21000	21000	ug/kg	MADEP EPH REV 1.1
C19-C36 Aliphatics		23700	11000	11000	ug/kg	MADEP EPH REV 1.1
C11-C22 Aromatics		188000	21000	21000	ug/kg	MADEP EPH REV 1.1
Antimony		0.54 B	1.0	0.16	mg/kg	SW846 6010C
Arsenic		9.9	1.0	0.22	mg/kg	SW846 6010C
Barium		64.3	5.2	0.075	mg/kg	SW846 6010C
Beryllium		0.63	0.41	0.025	mg/kg	SW846 6010C
Cadmium		0.50	0.41	0.044	mg/kg	SW846 6010C
Chromium		19.5	1.0	0.098	mg/kg	SW846 6010C
Lead		131	1.0	0.17	mg/kg	SW846 6010C
Mercury		0.31	0.037	0.011	mg/kg	SW846 7471B
Nickel		13.5	4.1	0.045	mg/kg	SW846 6010C
Vanadium		28.2	1.0	0.14	mg/kg	SW846 6010C
Zinc		105	2.1	0.17	mg/kg	SW846 6010C
Ignitability (Flashpoint)		> 230			Deg. F	SW846 1020
Redox Potential Vs H2		377			mv	ASTM D1498-76M
Specific Conductivity		610	0.50		umhos/cm	EPA 120.1M
pH		7.4			su	SW846 9045D

New England ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	045163-34KNOWLTON-TP102-S2		
Lab Sample ID:	MC26999-1	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8260C	**Percent Solids:**	84.8
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G134013.D	1	12/12/13	JM	n/a	n/a	MSG5172
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	15.4 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	470	180	ug/kg	
71-43-2	Benzene	ND	24	12	ug/kg	
108-86-1	Bromobenzene	ND	240	13	ug/kg	
74-97-5	Bromochloromethane	ND	240	28	ug/kg	
75-27-4	Bromodichloromethane	ND	95	17	ug/kg	
75-25-2	Bromoform	ND	95	14	ug/kg	
74-83-9	Bromomethane	ND	95	46	ug/kg	
78-93-3	2-Butanone (MEK)	ND	240	150	ug/kg	
104-51-8	n-Butylbenzene	ND	240	8.1	ug/kg	
135-98-8	sec-Butylbenzene	ND	240	7.5	ug/kg	
98-06-6	tert-Butylbenzene	ND	240	17	ug/kg	
75-15-0	Carbon disulfide	ND	240	7.2	ug/kg	
56-23-5	Carbon tetrachloride	ND	95	55	ug/kg	
108-90-7	Chlorobenzene	ND	95	13	ug/kg	
75-00-3	Chloroethane	ND	240	28	ug/kg	
67-66-3	Chloroform	ND	95	14	ug/kg	
74-87-3	Chloromethane	ND	240	58	ug/kg	
95-49-8	o-Chlorotoluene	ND	240	19	ug/kg	
106-43-4	p-Chlorotoluene	ND	240	21	ug/kg	
108-20-3	Di-Isopropyl ether	ND	95	8.8	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	240	96	ug/kg	
124-48-1	Dibromochloromethane	ND	95	20	ug/kg	
106-93-4	1,2-Dibromoethane	ND	95	27	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	95	9.9	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	95	11	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	95	9.6	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	95	53	ug/kg	
75-34-3	1,1-Dichloroethane	ND	95	16	ug/kg	
107-06-2	1,2-Dichloroethane	ND	95	26	ug/kg	
75-35-4	1,1-Dichloroethene	ND	95	25	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	95	24	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	95	21	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-34KNOWLTON-TP102-S2		
Lab Sample ID:	MC26999-1	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8260C	**Percent Solids:**	84.8
Project:	GEI Tufts Street Somerville MA		

VOA MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	95	20	ug/kg	
142-28-9	1,3-Dichloropropane	ND	240	21	ug/kg	
594-20-7	2,2-Dichloropropane	ND	240	31	ug/kg	
563-58-6	1,1-Dichloropropene	ND	240	11	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	95	14	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	95	14	ug/kg	
123-91-1	1,4-Dioxane	ND	1200	990	ug/kg	
60-29-7	Ethyl Ether	ND	240	35	ug/kg	
100-41-4	Ethylbenzene	ND	95	8.4	ug/kg	
87-68-3	Hexachlorobutadiene	ND	240	27	ug/kg	
591-78-6	2-Hexanone	ND	240	120	ug/kg	
98-82-8	Isopropylbenzene	ND	240	13	ug/kg	
99-87-6	p-Isopropyltoluene	ND	240	7.5	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	95	19	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	240	88	ug/kg	
74-95-3	Methylene bromide	ND	240	17	ug/kg	
75-09-2	Methylene chloride	ND	95	73	ug/kg	
91-20-3	Naphthalene	ND	240	37	ug/kg	
103-65-1	n-Propylbenzene	ND	240	11	ug/kg	
100-42-5	Styrene	ND	240	9.7	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	240	33	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	95	9.9	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	240	18	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	95	14	ug/kg	
127-18-4	Tetrachloroethene	ND	95	21	ug/kg	
109-99-9	Tetrahydrofuran	ND	470	59	ug/kg	
108-88-3	Toluene	ND	240	12	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	240	20	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	240	17	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	95	8.5	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	95	16	ug/kg	
79-01-6	Trichloroethene	ND	95	22	ug/kg	
75-69-4	Trichlorofluoromethane	ND	95	50	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	240	18	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	240	9.7	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	240	6.1	ug/kg	
75-01-4	Vinyl chloride	ND	95	27	ug/kg	
	m,p-Xylene	ND	95	13	ug/kg	
95-47-6	o-Xylene	ND	95	9.7	ug/kg	
1330-20-7	Xylene (total)	ND	95	9.7	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-34KNOWLTON-TP102-S2		
Lab Sample ID:	MC26999-1	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8260C	**Percent Solids:**	84.8
Project:	GEI Tufts Street Somerville MA		

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W16446.D	5	12/14/13	KR	12/11/13	OP36150	MSW734
Run #2	W16529.D	50	12/17/13	KR	12/16/13	OP36150	MSW736

	Initial Weight	Final Volume
Run #1	20.2 g	1.0 ml
Run #2	20.2 g	1.0 ml

ABN MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	2900	360	ug/kg	
95-57-8	2-Chlorophenol	ND	1400	65	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	2900	73	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	2900	84	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	2900	470	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	5800	720	ug/kg	
95-48-7	2-Methylphenol	ND	2900	120	ug/kg	
	3&4-Methylphenol	191	2900	140	ug/kg	J
88-75-5	2-Nitrophenol	ND	2900	77	ug/kg	
100-02-7	4-Nitrophenol	ND	5800	540	ug/kg	
87-86-5	Pentachlorophenol	ND	2900	200	ug/kg	
108-95-2	Phenol	ND	1400	82	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	2900	72	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	2900	71	ug/kg	
83-32-9	Acenaphthene	6530	580	78	ug/kg	
208-96-8	Acenaphthylene	8130	580	58	ug/kg	
98-86-2	Acetophenone	ND	2900	64	ug/kg	
62-53-3	Aniline	ND	2900	140	ug/kg	
120-12-7	Anthracene	23300	580	70	ug/kg	
56-55-3	Benzo(a)anthracene	36900 [a]	5800	750	ug/kg	
50-32-8	Benzo(a)pyrene	31700 [a]	5800	620	ug/kg	
205-99-2	Benzo(b)fluoranthene	26600 [a]	5800	720	ug/kg	
191-24-2	Benzo(g,h,i)perylene	20600	580	58	ug/kg	
207-08-9	Benzo(k)fluoranthene	20000	580	88	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	1400	73	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	1400	59	ug/kg	
91-58-7	2-Chloronaphthalene	ND	1400	79	ug/kg	
106-47-8	4-Chloroaniline	ND	2900	72	ug/kg	
218-01-9	Chrysene	33800 [a]	5800	720	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	1400	68	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	1400	88	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	1400	100	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

ABN MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	1,2-Dichlorobenzene	ND	1400	75	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	1400	65	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1400	83	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1400	77	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	2900	190	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	2900	72	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	1400	140	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	6460	580	69	ug/kg	
132-64-9	Dibenzofuran	6360	580	80	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	1400	150	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	1400	45	ug/kg	
84-66-2	Diethyl phthalate	ND	1400	72	ug/kg	
131-11-3	Dimethyl phthalate	ND	1400	84	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1400	54	ug/kg	
206-44-0	Fluoranthene	86100 [a]	5800	790	ug/kg	
86-73-7	Fluorene	8320	580	77	ug/kg	
118-74-1	Hexachlorobenzene	ND	1400	91	ug/kg	
87-68-3	Hexachlorobutadiene	ND	1400	84	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	2900	720	ug/kg	
67-72-1	Hexachloroethane	ND	1400	70	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19400	580	64	ug/kg	
78-59-1	Isophorone	ND	1400	67	ug/kg	
91-57-6	2-Methylnaphthalene	2050	580	74	ug/kg	
91-20-3	Naphthalene	1920	580	93	ug/kg	
98-95-3	Nitrobenzene	ND	1400	78	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	1400	83	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	1400	87	ug/kg	
85-01-8	Phenanthrene	77400 [a]	5800	780	ug/kg	
129-00-0	Pyrene	73300 [a]	5800	680	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	1400	80	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	69%	54%	30-130%
4165-62-2	Phenol-d5	69%	65%	30-130%
118-79-6	2,4,6-Tribromophenol	78%	46%	30-130%
4165-60-0	Nitrobenzene-d5	71%	58%	30-130%
321-60-8	2-Fluorobiphenyl	80%	64%	30-130%
1718-51-0	Terphenyl-d14	93%	69%	30-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

ABN MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8082 SW846 3546	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ86704.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	10.0 ml
Run #2		

MA Polychlorinated Biphenyls MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	37	17	ug/kg	
11104-28-2	Aroclor 1221	ND	37	22	ug/kg	
11141-16-5	Aroclor 1232	ND	37	18	ug/kg	
53469-21-9	Aroclor 1242	ND	37	19	ug/kg	
12672-29-6	Aroclor 1248	ND	37	17	ug/kg	
11097-69-1	Aroclor 1254	ND	37	27	ug/kg	
11096-82-5	Aroclor 1260	ND	37	19	ug/kg	
37324-23-5	Aroclor 1262	ND	37	32	ug/kg	
11100-14-4	Aroclor 1268	ND	37	17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		30-150%
877-09-8	Tetrachloro-m-xylene	71%		30-150%
2051-24-3	Decachlorobiphenyl	79%		30-150%
2051-24-3	Decachlorobiphenyl	103%		30-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	MADEP EPH REV 1.1 SW846 3546	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BJ24137.D	1	12/12/13	ZB	12/12/13	OP36155	GBJ899
Run #2							

	Initial Weight	Final Volume
Run #1	11.1 g	2.0 ml
Run #2		

Extractable TPHC Ranges

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	278000	21000	21000	ug/kg	
	C9-C18 Aliphatics	ND	11000	11000	ug/kg	
	C19-C36 Aliphatics	23700	11000	11000	ug/kg	
	C11-C22 Aromatics	188000	21000	21000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		40-140%
321-60-8	2-Fluorobiphenyl	94%		40-140%
580-13-2	2-Bromonaphthalene	67%		40-140%
3386-33-2	1-Chlorooctadecane	78%		40-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
		Percent Solids:	85.5
Project:	GEI Tufts Street Somerville MA		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	0.54 B	1.0	0.16	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Arsenic	9.9	1.0	0.22	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Barium	64.3	5.2	0.075	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Beryllium	0.63	0.41	0.025	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Cadmium	0.50	0.41	0.044	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Chromium	19.5	1.0	0.098	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Lead	131	1.0	0.17	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Mercury	0.31	0.037	0.011	mg/kg	1	12/12/13	12/12/13	SA	SW846 7471B [1]	SW846 7471B [4]
Nickel	13.5	4.1	0.045	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Selenium	0.36 U	1.0	0.36	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Silver	0.13 U	0.52	0.13	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Thallium	0.14 U	1.0	0.14	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Vanadium	28.2	1.0	0.14	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]
Zinc	105	2.1	0.17	mg/kg	1	12/11/13	12/12/13	EAL	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA16546
(2) Instrument QC Batch: MA16551
(3) Prep QC Batch: MP22240
(4) Prep QC Batch: MP22242

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
		Percent Solids:	85.5
Project:	GEI Tufts Street Somerville MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 0.46	0.46	mg/kg	1	12/13/13 15:03	MC	SW846 3060A/7196A
Cyanide Reactivity	< 1.8	1.8	mg/kg	1	12/11/13 10:10	BF	SW846 CHAP7
Ignitability (Flashpoint)	> 230		Deg. F	1	12/11/13	BF	SW846 1020
Redox Potential Vs H2	377		mv	1	12/10/13	MA	ASTM D1498-76M
Solids, Percent	85.5		%	1	12/11/13	HS	SM21 2540 B MOD.
Specific Conductivity	610	0.50	umhos/cm	1	12/10/13	MA	EPA 120.1M
Sulfide Reactivity	< 58	58	mg/kg	1	12/11/13	BF	SW846 CHAP7
pH	7.4		su	1	12/10/13	MA	SW846 9045D

RL = Reporting Limit

New England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- EPH Form
- Sample Tracking Chronicle

Chain-of-Custody Record

Laboratory: Accutest

Laboratory Job # (Lab use only) MC26999

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Tufts Street
Project Location: Sommerville, MA
Project Number: 045163
Project Manager: J. Roman
(o) 781-721-4136 (c) 619-977-2951

Page _1 of _1

Send Report to: Sarah Moseley
Send EDD to: labdata@geiconsultants.com

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required?	YES	NO	NA
Are Drinking Water Samples Submitted?	YES	NO	NA
If Yes, Have Drinking Water Sampling Requirements Been Met?	YES	NO	NA

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	VOCs	% Solids	EPH (fractions only)	RCRA 8 Metals, Hex Chrome	SVOCs/ PCBs	Conductivity/ Ignitibility	pH/ ORP	Sulfide and Cyanide Reactivity	Sample Specific Remarks
MC26999-1	045163-34Knowlton-TP102-S2	12/10/13	1350	SO	3	MLK	X	X							
-2	045163 34Knowlton-COMP	12/10/13	1355	SO	3	MLK			X	X	X	X	X	X	
															10FS2
															10D

Preservative: MEOH

Analysis

Sample Handling

Samples Field Filtered: YES NO NA

Sampled Shipped With Ice: YES NO

MCP Level Needed: GEI requires that, within the specified method, the most stringent Method 1 MCP standard be met for all analytes whenever possible.

	Date:	Time:	
Relinquished by sampler: (signature) 1. Maegan Keller	12/10/13	1516	Received by: (signature) 1. Brunck
Relinquished by: (signature) 2.	Date:	Time:	Received by: (signature) 2.
Relinquished by: (signature) 3.	Date:	Time:	Received by: (signature) 3.
Relinquished by: (signature) 4.	Date:	Time:	Received by: (signature) 4.

RUSH!

Turnaround Time (Business days):

Normal ____ Other ____
10-Day ____ 7-Day ____
5-Day ____ 3-Day _X__

Before submitting rush turnaround samples, you must notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

TAT approved by Frank
Call prodect managaer if metal(s) exceed 20X haz waste rule
pH and ORP have a 24 hour hold time

@ .2°C

12/10/2013
T:\FIELD FORMS\Chain of Custody_MCP 2013

MC26999: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC26999 **Client:** GEI **Immediate Client Services Action Required:** No

Date / Time Received: 12/10/2013 **Delivery Method:** **Client Service Action Required at Login:** No

Project: **No. Coolers:** 1 **Airbill #'s:**

Cooler Security	Y or N		Y or N
1. Custody Seals Present:	☑ ☐	3. COC Present:	☑ ☐
2. Custody Seals Intact:	☑ ☐	4. Smpl Dates/Time OK	☑ ☐

Cooler Temperature	Y or N
1. Temp criteria achieved:	☑ ☐
2. Cooler temp verification:	Infared gun
3. Cooler media:	Ice (bag)

Quality Control Preservation	Y or N	N/A
1. Trip Blank present / cooler:	☐ ☐	☑
2. Trip Blank listed on COC:	☐ ☐	☑
3. Samples preserved properly:	☑ ☐	
4. VOCs headspace free:	☐ ☐	☑

Sample Integrity - Documentation	Y or N
1. Sample labels present on bottles:	☑ ☐
2. Container labeling complete:	☑ ☐
3. Sample container label / COC agree:	☑ ☐

Sample Integrity - Condition	Y or N
1. Sample recvd within HT:	☑ ☐
2. All containers accounted for:	☑ ☐
3. Condition of sample:	Intact

Sample Integrity - Instructions	Y or N	N/A
1. Analysis requested is clear:	☑ ☐	
2. Bottles received for unspecified tests	☐ ☑	
3. Sufficient volume recvd for analysis:	☑ ☐	
4. Compositing instructions clear:	☐ ☐	☑
5. Filtering instructions clear:	☐ ☐	☑

Comments

Accutest Laboratories
V:508.481.6200
495 Technology Center West, Bldg One
F: 508.481.7753
Marlborough, MA
www/accutest.com

MC26999: Chain of Custody
Page 2 of 2

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	MC26999
Project Location:	GEI Tufts Street Somerville MA	MADEP RTN	None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
MC26999-1,MC26999-2

Matrices: Groundwater/Surface Water ( ) Soil/Sediment (X) Drinking Water ( ) Air ( ) Other ( )

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg (X) CAM III B	MassDEP VPH ( ) CAM IV A	8081 Pesticides ( ) CAM V B	7196 Hex Cr (X) CAM VI B	Mass DEP APH ( ) CAM IX A
8270 SVOC (X) CAM II B	7010 Metals ( ) CAM III C	MassDEP EPH (X) CAM IV B	8151 Herbicides ( ) CAM V C	8330 Explosives ( ) CAM VIII A	TO-15 VOC ( ) CAM IX B
6010 Metals (X) CAM III A	6020 Metals ( ) CAM III D	8082 PCB (X) CAM V A	9014 Total Cyanide/PAC ( ) CAM VI A	6860 Perchlorate ( ) CAM VIII B	

Affirmative Responses to Questions A Through F are required for "Presumptive Certainty status

A	Were all samples received in a condition consistent with those described on the Chain-of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑	Yes	☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑	Yes	☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑	Yes	☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑	Yes	☐ No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ ☑	Yes Yes	☐ No ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑	Yes	☐ No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	☐	Yes	☑ No [1]
	Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.			
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☐	Yes	☑ No [1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑	Yes	☐ No [1]

[1] ***All Negative responses must be addressed in an attached Environmental Laboratory case narrative.***

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Laboratory Director

Printed Name: Reza Tand Date: 12/30/2013

MADEP EPH FORM

Matrix	Aqueous ☐	Soil ☑	Sediment ☐	Other ☐			
Containers	Satisfactory ☑	Broken ☐	Leaking ☐				
Aqueous Preservative	N/A ☑	pH <= 2 ☐	pH > 2 ☐				
Temperature	Received on Ice ☐	Received at 4 Deg. C ☐	Other ☑	Rec'd at 0.2 deg C.			
Extraction Method	SW846 3546						

Method for Ranges: MADEP EPH REV 1.1
Method for Targets: MADEP EPH REV 1.1
EPH Surrogate Stds. Aliphatic: 1-Chlorooctadecane
Aromatic: o-Terphenyl
EPH Fractionation Surrogate Standards. 2-Fluorobiphenyl
2-Bromonaphthalene

Client ID: 145163-34KNOWLTON-CO Lab ID: MC26999-2
Date Collected: 12/10/2013 Date Received: 12/10/2013

Date Extracted:	First Date Run:	Last Date Run:
12/12/2013	12/12/2013	N/A
% Solids:	**Low Dilution:**	**High Dilution:**
85.5	1	N/A

Unadjusted Ranges	CAS #	Units	Result	RDL	Q
C11-C22 Aromatics (Unadj.)		ug/kg	278000 A	21000	

Adjusted Ranges				
C9-C18 Aliphatics		ug/kg	ND A	11000
C19-C36 Aliphatics		ug/kg	23700 A	11000
C11-C22 Aromatics		ug/kg	188000 B	21000
Surrogate Recoveries				**Acceptance Range**
1-Chlorooctadecane		%	78	40-140 %
o-Terphenyl		%	89	40-140 %
2-Fluorobiphenyl		%	94	40-140 %
2-Bromonaphthalene		%	67	40-140 %

Footnotes

A Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

B Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range. C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes

Z A 'J' qualifier indicates an estimated value

Were all QA/QC procedures REQUIRED by the EPH Method followed? ☑ Yes ☐ No- Details Attatched
Were all performance/acceptance standards for required QA/QC procedures achieved? ☑ Yes ☐ No- Details Attatched
Were any significant modifications made to the EPH method, as specified in Sect. 11.3? ☑ No ☐ Yes- Details Attatched

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtainig the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Signature

Postition Laboratory Director

Printed Name Reza Tand

Date 12/18/2013

Internal Sample Tracking Chronicle

GEI Consultants, Inc.

Job No: MC26999

GEI Tufts Street Somerville MA
Project No: 045163

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC26999-1 Collected: 10-DEC-13 13:50 By: MLK Received: 10-DEC-13 By: NT 045163-34KNOWLTON-TP102-S2						
MC26999-1	SM21 2540 B MOD.	11-DEC-13	HS			%SOL
MC26999-1	SW846 8260C	12-DEC-13 12:26	JM			V8260MCP
MC26999-2 Collected: 10-DEC-13 13:55 By: MLK Received: 10-DEC-13 By: NT 145163-34KNOWLTON-COMP						
MC26999-2	EPA 120.1M	10-DEC-13	MA			SCON
MC26999-2	SW846 9045D	10-DEC-13	MA			PH
MC26999-2	ASTM D1498-76M	10-DEC-13	MA			EH
MC26999-2	SM21 2540 B MOD.	11-DEC-13	HS			%SOL
MC26999-2	SW846 1020	11-DEC-13	BF			IGN
MC26999-2	SW846 CHAP7	11-DEC-13	BF	11-DEC-13	BF	SREAC
MC26999-2	SW846 CHAP7	11-DEC-13 10:10	BF	11-DEC-13	BF	CREAC
MC26999-2	SW846 7471B	12-DEC-13 12:08	SA	12-DEC-13	EM	HG
MC26999-2	MADEP EPH REV 1.1	12-DEC-13 14:52	ZB	12-DEC-13	AW	BMAEPHR
MC26999-2	SW846 6010C	12-DEC-13 15:16	EAL	11-DEC-13	MA	AG,AS,BA,CD,CR,PB,SE
MC26999-2	SW846 8082	13-DEC-13 05:45	CZ	11-DEC-13	AJ	P8082MCP
MC26999-2	SW846 3060A/7196A	13-DEC-13 15:03	MC	13-DEC-13	MC	XCRA
MC26999-2	SW846 8270D	14-DEC-13 00:13	KR	11-DEC-13	TA	AB8270MCP
MC26999-2	SW846 8270D	17-DEC-13 14:53	KR	16-DEC-13	PA	AB8270MCP

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG5172-MB	G134010.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	500	190	ug/kg	
71-43-2	Benzene	ND	25	12	ug/kg	
108-86-1	Bromobenzene	ND	250	14	ug/kg	
74-97-5	Bromochloromethane	ND	250	29	ug/kg	
75-27-4	Bromodichloromethane	ND	100	18	ug/kg	
75-25-2	Bromoform	ND	100	15	ug/kg	
74-83-9	Bromomethane	ND	100	49	ug/kg	
78-93-3	2-Butanone (MEK)	ND	250	150	ug/kg	
104-51-8	n-Butylbenzene	ND	250	8.6	ug/kg	
135-98-8	sec-Butylbenzene	ND	250	7.9	ug/kg	
98-06-6	tert-Butylbenzene	ND	250	18	ug/kg	
75-15-0	Carbon disulfide	ND	250	7.6	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	58	ug/kg	
108-90-7	Chlorobenzene	ND	100	13	ug/kg	
75-00-3	Chloroethane	ND	250	30	ug/kg	
67-66-3	Chloroform	ND	100	14	ug/kg	
74-87-3	Chloromethane	ND	250	61	ug/kg	
95-49-8	o-Chlorotoluene	ND	250	20	ug/kg	
106-43-4	p-Chlorotoluene	ND	250	22	ug/kg	
108-20-3	Di-Isopropyl ether	ND	100	9.3	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	100	ug/kg	
124-48-1	Dibromochloromethane	ND	100	21	ug/kg	
106-93-4	1,2-Dibromoethane	ND	100	28	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	100	10	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	100	11	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	100	10	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	100	56	ug/kg	
75-34-3	1,1-Dichloroethane	ND	100	17	ug/kg	
107-06-2	1,2-Dichloroethane	ND	100	27	ug/kg	
75-35-4	1,1-Dichloroethene	ND	100	26	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	100	25	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	100	22	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	21	ug/kg	
142-28-9	1,3-Dichloropropane	ND	250	22	ug/kg	
594-20-7	2,2-Dichloropropane	ND	250	33	ug/kg	
563-58-6	1,1-Dichloropropene	ND	250	12	ug/kg	

Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG5172-MB	G134010.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	100	14	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	15	ug/kg	
123-91-1	1,4-Dioxane	ND	1300	1000	ug/kg	
60-29-7	Ethyl Ether	ND	250	37	ug/kg	
100-41-4	Ethylbenzene	ND	100	8.9	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	28	ug/kg	
591-78-6	2-Hexanone	ND	250	120	ug/kg	
98-82-8	Isopropylbenzene	ND	250	14	ug/kg	
99-87-6	p-Isopropyltoluene	ND	250	8.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	100	20	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	92	ug/kg	
74-95-3	Methylene bromide	ND	250	18	ug/kg	
75-09-2	Methylene chloride	ND	100	77	ug/kg	
91-20-3	Naphthalene	ND	250	39	ug/kg	
103-65-1	n-Propylbenzene	ND	250	12	ug/kg	
100-42-5	Styrene	ND	250	10	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	250	35	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	10	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	19	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	15	ug/kg	
127-18-4	Tetrachloroethene	ND	100	22	ug/kg	
109-99-9	Tetrahydrofuran	ND	500	63	ug/kg	
108-88-3	Toluene	ND	250	12	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	22	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	18	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	9.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	17	ug/kg	
79-01-6	Trichloroethene	ND	100	24	ug/kg	
75-69-4	Trichlorofluoromethane	ND	100	52	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	19	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	250	10	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	250	6.5	ug/kg	
75-01-4	Vinyl chloride	ND	100	28	ug/kg	
	m,p-Xylene	ND	100	14	ug/kg	
95-47-6	o-Xylene	ND	100	10	ug/kg	
1330-20-7	Xylene (total)	ND	100	10	ug/kg	

Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG5172-MB	G134010.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	110%	70-130%
2037-26-5	Toluene-D8	106%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG5172-BS	G134007.D	1	12/12/13	JM	n/a	n/a	MSG5172
MSG5172-BSD	G134008.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	2500	2190	88	1870	75	16	70-130/25
71-43-2	Benzene	2500	2470	99	2440	98	1	70-130/25
108-86-1	Bromobenzene	2500	2600	104	2520	101	3	70-130/25
74-97-5	Bromochloromethane	2500	2860	114	2740	110	4	70-130/25
75-27-4	Bromodichloromethane	2500	2830	113	2780	111	2	70-130/25
75-25-2	Bromoform	2500	2930	117	2890	116	1	70-130/25
74-83-9	Bromomethane	2500	3570	143* [a]	3720	149* [a]	4	70-130/25
78-93-3	2-Butanone (MEK)	2500	2370	95	2060	82	14	70-130/25
104-51-8	n-Butylbenzene	2500	2380	95	2340	94	2	70-130/25
135-98-8	sec-Butylbenzene	2500	2430	97	2360	94	3	70-130/25
98-06-6	tert-Butylbenzene	2500	2470	99	2430	97	2	70-130/25
75-15-0	Carbon disulfide	2500	2710	108	2610	104	4	70-130/25
56-23-5	Carbon tetrachloride	2500	3090	124	3040	122	2	70-130/25
108-90-7	Chlorobenzene	2500	2400	96	2380	95	1	70-130/25
75-00-3	Chloroethane	2500	3240	130	3300	132* [a]	2	70-130/25
67-66-3	Chloroform	2500	2650	106	2650	106	0	70-130/25
74-87-3	Chloromethane	2500	2430	97	2370	95	3	70-130/25
95-49-8	o-Chlorotoluene	2500	2380	95	2330	93	2	70-130/25
106-43-4	p-Chlorotoluene	2500	2460	98	2390	96	3	70-130/25
108-20-3	Di-Isopropyl ether	2500	2100	84	2040	82	3	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	2500	2750	110	2610	104	5	70-130/25
124-48-1	Dibromochloromethane	2500	2890	116	2840	114	2	70-130/25
106-93-4	1,2-Dibromoethane	2500	2490	100	2450	98	2	70-130/25
95-50-1	1,2-Dichlorobenzene	2500	2320	93	2290	92	1	70-130/25
541-73-1	1,3-Dichlorobenzene	2500	2330	93	2330	93	0	70-130/25
106-46-7	1,4-Dichlorobenzene	2500	2400	96	2410	96	0	70-130/25
75-71-8	Dichlorodifluoromethane	2500	2330	93	2500	100	7	70-130/25
75-34-3	1,1-Dichloroethane	2500	2410	96	2380	95	1	70-130/25
107-06-2	1,2-Dichloroethane	2500	2670	107	2690	108	1	70-130/25
75-35-4	1,1-Dichloroethene	2500	2830	113	2800	112	1	70-130/25
156-59-2	cis-1,2-Dichloroethene	2500	2610	104	2490	100	5	70-130/25
156-60-5	trans-1,2-Dichloroethene	2500	2730	109	2740	110	0	70-130/25
78-87-5	1,2-Dichloropropane	2500	2290	92	2230	89	3	70-130/25
142-28-9	1,3-Dichloropropane	2500	2360	94	2350	94	0	70-130/25
594-20-7	2,2-Dichloropropane	2500	3110	124	3070	123	1	70-130/25
563-58-6	1,1-Dichloropropene	2500	2720	109	2640	106	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG5172-BS	G134007.D	1	12/12/13	JM	n/a	n/a	MSG5172
MSG5172-BSD	G134008.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	2500	2480	99	2480	99	0	70-130/25
10061-02-6	trans-1,3-Dichloropropene	2500	2940	118	2800	112	5	70-130/25
123-91-1	1,4-Dioxane	12500	13700	110	12700	102	8	70-130/25
60-29-7	Ethyl Ether	2500	2190	88	2060	82	6	70-130/25
100-41-4	Ethylbenzene	2500	2520	101	2510	100	0	70-130/25
87-68-3	Hexachlorobutadiene	2500	2760	110	2840	114	3	70-130/25
591-78-6	2-Hexanone	2500	2230	89	2070	83	7	70-130/25
98-82-8	Isopropylbenzene	2500	2450	98	2380	95	3	70-130/25
99-87-6	p-Isopropyltoluene	2500	2570	103	2590	104	1	70-130/25
1634-04-4	Methyl Tert Butyl Ether	2500	2600	104	2540	102	2	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	2500	2490	100	2340	94	6	70-130/25
74-95-3	Methylene bromide	2500	2660	106	2540	102	5	70-130/25
75-09-2	Methylene chloride	2500	2670	107	2620	105	2	70-130/25
91-20-3	Naphthalene	2500	2860	114	2670	107	7	70-130/25
103-65-1	n-Propylbenzene	2500	2280	91	2230	89	2	70-130/25
100-42-5	Styrene	2500	2580	103	2560	102	1	70-130/25
994-05-8	tert-Amyl Methyl Ether	2500	2750	110	2500	100	10	70-130/25
637-92-3	tert-Butyl Ethyl Ether	2500	2490	100	2390	96	4	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	2500	2750	110	2710	108	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	2500	2280	91	2170	87	5	70-130/25
127-18-4	Tetrachloroethene	2500	2580	103	2530	101	2	70-130/25
109-99-9	Tetrahydrofuran	2500	2030	81	1850	74	9	70-130/25
108-88-3	Toluene	2500	2730	109	2660	106	3	70-130/25
87-61-6	1,2,3-Trichlorobenzene	2500	2940	118	2830	113	4	70-130/25
120-82-1	1,2,4-Trichlorobenzene	2500	2680	107	2500	100	7	70-130/25
71-55-6	1,1,1-Trichloroethane	2500	2840	114	2760	110	3	70-130/25
79-00-5	1,1,2-Trichloroethane	2500	2520	101	2380	95	6	70-130/25
79-01-6	Trichloroethene	2500	2660	106	2590	104	3	70-130/25
75-69-4	Trichlorofluoromethane	2500	2980	119	3070	123	3	70-130/25
96-18-4	1,2,3-Trichloropropane	2500	2330	93	2270	91	3	70-130/25
95-63-6	1,2,4-Trimethylbenzene	2500	2490	100	2480	99	0	70-130/25
108-67-8	1,3,5-Trimethylbenzene	2500	2500	100	2490	100	0	70-130/25
75-01-4	Vinyl chloride	2500	3150	126	3270	131* [a]	4	70-130/25
	m,p-Xylene	5000	4950	99	4910	98	1	70-130/25
95-47-6	o-Xylene	2500	2370	95	2410	96	2	70-130/25
1330-20-7	Xylene (total)	7500	7320	98	7320	98	0	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG5172-BS	G134007.D	1	12/12/13	JM	n/a	n/a	MSG5172
MSG5172-BSD	G134008.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	116%	110%	70-130%
2037-26-5	Toluene-D8	108%	108%	70-130%
460-00-4	4-Bromofluorobenzene	98%	96%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27024-1MS	G134018.D	1	12/12/13	JM	n/a	n/a	MSG5172
MC27024-1MSD	G134019.D	1	12/12/13	JM	n/a	n/a	MSG5172
MC27024-1	G134016.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Compound	MC27024-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		2730	2530	93	2400	88	5	70-130/30
71-43-2	Benzene	ND		2730	2680	98	2660	97	1	70-130/30
108-86-1	Bromobenzene	ND		2730	2730	100	2660	97	3	70-130/30
74-97-5	Bromochloromethane	ND		2730	3130	115	3070	113	2	70-130/30
75-27-4	Bromodichloromethane	ND		2730	3080	113	3090	113	0	70-130/30
75-25-2	Bromoform	ND		2730	3170	116	3090	113	3	70-130/30
74-83-9	Bromomethane	ND		2730	4340	159* [a]	4130	151* [a]	5	70-130/30
78-93-3	2-Butanone (MEK)	ND		2730	2870	105	2780	102	3	70-130/30
104-51-8	n-Butylbenzene	ND		2730	2540	93	2500	92	2	70-130/30
135-98-8	sec-Butylbenzene	ND		2730	2520	92	2520	92	0	70-130/30
98-06-6	tert-Butylbenzene	ND		2730	2620	96	2560	94	2	70-130/30
75-15-0	Carbon disulfide	ND		2730	2750	101	2890	106	5	70-130/30
56-23-5	Carbon tetrachloride	ND		2730	3130	115	3350	123	7	70-130/30
108-90-7	Chlorobenzene	ND		2730	2610	96	2550	93	2	70-130/30
75-00-3	Chloroethane	ND		2730	3650	134* [a]	3580	131* [a]	2	70-130/30
67-66-3	Chloroform	ND		2730	2970	109	2910	107	2	70-130/30
74-87-3	Chloromethane	ND		2730	2670	98	2620	96	2	70-130/30
95-49-8	o-Chlorotoluene	ND		2730	2520	92	2490	91	1	70-130/30
106-43-4	p-Chlorotoluene	ND		2730	2610	96	2570	94	2	70-130/30
108-20-3	Di-Isopropyl ether	ND		2730	2220	81	2210	81	0	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND		2730	2730	100	2650	97	3	70-130/30
124-48-1	Dibromochloromethane	ND		2730	3060	112	3120	114	2	70-130/30
106-93-4	1,2-Dibromoethane	ND		2730	2760	101	2690	99	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		2730	2490	91	2490	91	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		2730	2500	92	2520	92	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		2730	2620	96	2570	94	2	70-130/30
75-71-8	Dichlorodifluoromethane	ND		2730	2990	110	3000	110	0	70-130/30
75-34-3	1,1-Dichloroethane	ND		2730	2570	94	2610	96	2	70-130/30
107-06-2	1,2-Dichloroethane	ND		2730	3020	111	3020	111	0	70-130/30
75-35-4	1,1-Dichloroethene	ND		2730	3250	119	3010	110	8	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		2730	2800	103	2800	103	0	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		2730	2640	97	2830	104	7	70-130/30
78-87-5	1,2-Dichloropropane	ND		2730	2430	89	2400	88	1	70-130/30
142-28-9	1,3-Dichloropropane	ND		2730	2590	95	2550	93	2	70-130/30
594-20-7	2,2-Dichloropropane	ND		2730	3370	124	3220	118	5	70-130/30
563-58-6	1,1-Dichloropropene	ND		2730	3020	111	2920	107	3	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27024-1MS	G134018.D	1	12/12/13	JM	n/a	n/a	MSG5172
MC27024-1MSD	G134019.D	1	12/12/13	JM	n/a	n/a	MSG5172
MC27024-1	G134016.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Compound	MC27024-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		2730	2710	99	2740	100	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		2730	3160	116	3120	114	1	70-130/30
123-91-1	1,4-Dioxane	ND		13600	12000	88	14000	103	15	70-130/30
60-29-7	Ethyl Ether	ND		2730	2400	88	2390	88	0	70-130/30
100-41-4	Ethylbenzene	ND		2730	2740	100	2670	98	3	70-130/30
87-68-3	Hexachlorobutadiene	ND		2730	2620	96	2920	107	11	70-130/30
591-78-6	2-Hexanone	ND		2730	2810	103	2610	96	7	70-130/30
98-82-8	Isopropylbenzene	ND		2730	2580	95	2550	93	1	70-130/30
99-87-6	p-Isopropyltoluene	ND		2730	2740	100	2720	100	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		2730	2910	107	2890	106	1	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		2730	2800	103	2680	98	4	70-130/30
74-95-3	Methylene bromide	ND		2730	2900	106	2900	106	0	70-130/30
75-09-2	Methylene chloride	ND		2730	2980	109	2950	108	1	70-130/30
91-20-3	Naphthalene	ND		2730	2770	102	2740	100	1	70-130/30
103-65-1	n-Propylbenzene	ND		2730	2400	88	2340	86	3	70-130/30
100-42-5	Styrene	ND		2730	2810	103	2750	101	2	70-130/30
994-05-8	tert-Amyl Methyl Ether	ND		2730	2910	107	2900	106	0	70-130/30
637-92-3	tert-Butyl Ethyl Ether	ND		2730	2690	99	2700	99	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		2730	3020	111	2970	109	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		2730	2200	81	2130	78	3	70-130/30
127-18-4	Tetrachloroethene	ND		2730	2850	104	2800	103	2	70-130/30
109-99-9	Tetrahydrofuran	ND		2730	2010	74	1950	71	3	70-130/30
108-88-3	Toluene	ND		2730	2980	109	2990	110	0	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		2730	2810	103	2890	106	3	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		2730	2580	95	2610	96	1	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		2730	2740	100	3040	111	10	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		2730	2690	99	2640	97	2	70-130/30
79-01-6	Trichloroethene	ND		2730	3100	114	3070	113	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		2730	3510	129	3550	130	1	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		2730	2470	91	2460	90	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		2730	2680	98	2620	96	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		2730	2730	100	2660	97	3	70-130/30
75-01-4	Vinyl chloride	ND		2730	3940	144* [a]	3920	144* [a]	1	70-130/30
	m,p-Xylene	ND		5460	5470	100	5260	96	4	70-130/30
95-47-6	o-Xylene	ND		2730	2650	97	2580	95	3	70-130/30
1330-20-7	Xylene (total)	ND		8190	8120	99	7840	96	4	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27024-1MS	G134018.D	1	12/12/13	JM	n/a	n/a	MSG5172
MC27024-1MSD	G134019.D	1	12/12/13	JM	n/a	n/a	MSG5172
MC27024-1	G134016.D	1	12/12/13	JM	n/a	n/a	MSG5172

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC26999-1

CAS No.	Surrogate Recoveries	MS	MSD	MC27024-1	Limits
1868-53-7	Dibromofluoromethane	112%	109%	112%	70-130%
2037-26-5	Toluene-D8	107%	107%	108%	70-130%
460-00-4	4-Bromofluorobenzene	95%	95%	98%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Check Std:	MSG5172-CC5138	**Injection Date:**	12/12/13
Lab File ID:	G134006.D	**Injection Time:**	08:36
Instrument ID:	GCMSG	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	145870	5.07	228757	6.19	129305	9.54	125422	12.16	75429	3.09
Upper Limit [a]	291740	5.57	457514	6.69	258610	10.04	250844	12.66	150858	3.59
Lower Limit [b]	72935	4.57	114379	5.69	64653	9.04	62711	11.66	37715	2.59

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
MSG5172-BS	145141	5.07	228235	6.19	125035	9.54	121892	12.16	72263	3.09
MSG5172-BSD	139608	5.07	218069	6.19	118240	9.54	118063	12.16	64259	3.09
MSG5172-MB	148652	5.07	229841	6.19	123426	9.54	119319	12.16	81718	3.10
ZZZZZZ	138309	5.06	213578	6.19	117304	9.54	112484	12.16	79917	3.14
MC26999-1	143436	5.07	225062	6.19	120885	9.54	117852	12.16	63232	3.08
ZZZZZZ	134798	5.06	213011	6.19	115451	9.54	114932	12.16	65855	3.13
MC27024-1	137029	5.07	213295	6.19	115314	9.54	113751	12.16	76419	3.09
ZZZZZZ	136205	5.07	213893	6.19	114988	9.54	110218	12.16	66337	3.09
MC27024-1MS	129827	5.07	201526	6.19	111009	9.54	112461	12.16	64910	3.09
MC27024-1MSD	130651	5.07	202622	6.19	112648	9.54	113226	12.16	60561	3.08
ZZZZZZ	135562	5.07	208356	6.19	121877	9.54	118358	12.16	71187	3.08
ZZZZZZ	138192	5.07	212183	6.19	122602	9.54	116801	12.16	76537	3.09
ZZZZZZ	136823	5.07	216225	6.19	118418	9.54	117117	12.16	68021	3.07
ZZZZZZ	142702	5.07	220301	6.19	120499	9.54	116193	12.16	61312	3.07
ZZZZZZ	139867	5.07	216441	6.19	119562	9.54	114205	12.16	56857	3.07
ZZZZZZ	138203	5.07	214608	6.19	117744	9.54	114351	12.16	61554	3.07
ZZZZZZ	137929	5.07	218622	6.19	119902	9.54	115882	12.16	76210	3.07
ZZZZZZ	133668	5.07	210095	6.19	136375	9.54	124007	12.16	74603	3.07
ZZZZZZ	139280	5.07	223555	6.20	121709	9.54	116147	12.16	79233	3.07

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8260C **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC26999-1	G134013.D	112.0	105.0	96.0
MC27024-1MS	G134018.D	112.0	107.0	95.0
MC27024-1MSD	G134019.D	109.0	107.0	95.0
MSG5172-BS	G134007.D	116.0	108.0	98.0
MSG5172-BSD	G134008.D	110.0	108.0	96.0
MSG5172-MB	G134010.D	110.0	106.0	95.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

New England ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-MB	W16411.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	490	61	ug/kg	
95-57-8	2-Chlorophenol	ND	240	11	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	490	12	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	490	14	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	490	80	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	980	120	ug/kg	
95-48-7	2-Methylphenol	ND	490	19	ug/kg	
	3&4-Methylphenol	ND	490	24	ug/kg	
88-75-5	2-Nitrophenol	ND	490	13	ug/kg	
100-02-7	4-Nitrophenol	ND	980	92	ug/kg	
87-86-5	Pentachlorophenol	ND	490	34	ug/kg	
108-95-2	Phenol	ND	240	14	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	490	12	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	490	12	ug/kg	
83-32-9	Acenaphthene	ND	98	13	ug/kg	
208-96-8	Acenaphthylene	ND	98	9.8	ug/kg	
98-86-2	Acetophenone	ND	490	11	ug/kg	
62-53-3	Aniline	ND	490	24	ug/kg	
120-12-7	Anthracene	ND	98	12	ug/kg	
56-55-3	Benzo(a)anthracene	ND	98	13	ug/kg	
50-32-8	Benzo(a)pyrene	ND	98	11	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	98	12	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	98	9.8	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	98	15	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	240	12	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	240	10	ug/kg	
91-58-7	2-Chloronaphthalene	ND	240	13	ug/kg	
106-47-8	4-Chloroaniline	ND	490	12	ug/kg	
218-01-9	Chrysene	ND	98	12	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	240	11	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	240	15	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	240	18	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	240	13	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	240	11	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	240	14	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	240	13	ug/kg	

Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-MB	W16411.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

CAS No.	Compound	Result	RL	MDL	Units	Q
121-14-2	2,4-Dinitrotoluene	ND	490	33	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	490	12	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	240	24	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	98	12	ug/kg	
132-64-9	Dibenzofuran	ND	98	14	ug/kg	
84-74-2	Di-n-butyl phthalate	30.2	240	26	ug/kg	J
117-84-0	Di-n-octyl phthalate	ND	240	7.6	ug/kg	
84-66-2	Diethyl phthalate	36.7	240	12	ug/kg	J
131-11-3	Dimethyl phthalate	ND	240	14	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	240	9.0	ug/kg	
206-44-0	Fluoranthene	ND	98	13	ug/kg	
86-73-7	Fluorene	ND	98	13	ug/kg	
118-74-1	Hexachlorobenzene	ND	240	15	ug/kg	
87-68-3	Hexachlorobutadiene	ND	240	14	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	490	120	ug/kg	
67-72-1	Hexachloroethane	ND	240	12	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	98	11	ug/kg	
78-59-1	Isophorone	ND	240	11	ug/kg	
91-57-6	2-Methylnaphthalene	ND	98	12	ug/kg	
91-20-3	Naphthalene	ND	98	16	ug/kg	
98-95-3	Nitrobenzene	ND	240	13	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	240	14	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	240	15	ug/kg	
85-01-8	Phenanthrene	ND	98	13	ug/kg	
129-00-0	Pyrene	ND	98	11	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	240	13	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	70%	30-130%
4165-62-2	Phenol-d5	67%	30-130%
118-79-6	2,4,6-Tribromophenol	67%	30-130%
4165-60-0	Nitrobenzene-d5	69%	30-130%
321-60-8	2-Fluorobiphenyl	72%	30-130%
1718-51-0	Terphenyl-d14	86%	30-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-BS	W16412.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
OP36150-BSD	W16413.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic acid	2400	1950	81	1990	83	2	30-130/30
95-57-8	2-Chlorophenol	2400	1760	73	1840	77	4	30-130/30
59-50-7	4-Chloro-3-methyl phenol	2400	1730	72	1820	76	5	30-130/30
120-83-2	2,4-Dichlorophenol	2400	1690	71	1780	74	5	30-130/30
105-67-9	2,4-Dimethylphenol	2400	1790	75	1880	78	5	30-130/30
51-28-5	2,4-Dinitrophenol	2400	1490	62	1590	66	6	30-130/30
95-48-7	2-Methylphenol	2400	1690	71	1740	72	3	30-130/30
	3&4-Methylphenol	4790	3340	70	3500	73	5	30-130/30
88-75-5	2-Nitrophenol	2400	1810	76	1830	76	1	30-130/30
100-02-7	4-Nitrophenol	2400	1820	76	1780	74	2	30-130/30
87-86-5	Pentachlorophenol	2400	1600	67	1600	67	0	30-130/30
108-95-2	Phenol	2400	1780	74	1860	77	4	30-130/30
95-95-4	2,4,5-Trichlorophenol	2400	1740	73	1810	75	4	30-130/30
88-06-2	2,4,6-Trichlorophenol	2400	1800	75	1840	77	2	30-130/30
83-32-9	Acenaphthene	2400	2440	102	2520	105	3	40-140/30
208-96-8	Acenaphthylene	2400	2120	88	2120	88	0	40-140/30
98-86-2	Acetophenone	2400	1940	81	2020	84	4	40-140/30
62-53-3	Aniline	2400	1140	48	1120	47	2	40-140/30
120-12-7	Anthracene	2400	2440	102	2530	105	4	40-140/30
56-55-3	Benzo(a)anthracene	2400	2700	113	2810	117	4	40-140/30
50-32-8	Benzo(a)pyrene	2400	2450	102	2540	106	4	40-140/30
205-99-2	Benzo(b)fluoranthene	2400	2660	111	2760	115	4	40-140/30
191-24-2	Benzo(g,h,i)perylene	2400	2520	105	2570	107	2	40-140/30
207-08-9	Benzo(k)fluoranthene	2400	2720	113	2880	120	6	40-140/30
101-55-3	4-Bromophenyl phenyl ether	2400	2650	111	2740	114	3	40-140/30
85-68-7	Butyl benzyl phthalate	2400	3000	125	3090	129	3	40-140/30
91-58-7	2-Chloronaphthalene	2400	2270	95	2330	97	3	40-140/30
106-47-8	4-Chloroaniline	2400	1480	62	1480	62	0	40-140/30
218-01-9	Chrysene	2400	2580	108	2680	112	4	40-140/30
111-91-1	bis(2-Chloroethoxy)methane	2400	1690	71	1750	73	3	40-140/30
111-44-4	bis(2-Chloroethyl)ether	2400	2210	92	2290	95	4	40-140/30
108-60-1	bis(2-Chloroisopropyl)ether	2400	3050	127	3180	132	4	40-140/30
95-50-1	1,2-Dichlorobenzene	2400	2050	86	2120	88	3	40-140/30
122-66-7	1,2-Diphenylhydrazine	2400	2760	115	2880	120	4	40-140/30
541-73-1	1,3-Dichlorobenzene	2400	2080	87	2150	90	3	40-140/30
106-46-7	1,4-Dichlorobenzene	2400	2040	85	2150	90	5	40-140/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-BS	W16412.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
OP36150-BSD	W16413.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
121-14-2	2,4-Dinitrotoluene	2400	2370	99	2370	99	0	40-140/30
606-20-2	2,6-Dinitrotoluene	2400	2270	95	2270	95	0	40-140/30
91-94-1	3,3'-Dichlorobenzidine	2400	1460	61	1540	64	5	40-140/30
53-70-3	Dibenzo(a,h)anthracene	2400	2560	107	2620	109	2	40-140/30
132-64-9	Dibenzofuran	2400	2220	93	2300	96	4	40-140/30
84-74-2	Di-n-butyl phthalate	2400	2550	106	2680	112	5	40-140/30
117-84-0	Di-n-octyl phthalate	2400	3130	131	3270	136	4	40-140/30
84-66-2	Diethyl phthalate	2400	2550	106	2620	109	3	40-140/30
131-11-3	Dimethyl phthalate	2400	2450	102	2510	105	2	40-140/30
117-81-7	bis(2-Ethylhexyl)phthalate	2400	3060	128	3190	133	4	40-140/30
206-44-0	Fluoranthene	2400	2460	103	2480	103	1	40-140/30
86-73-7	Fluorene	2400	2470	103	2520	105	2	40-140/30
118-74-1	Hexachlorobenzene	2400	2550	106	2660	111	4	40-140/30
87-68-3	Hexachlorobutadiene	2400	2090	87	2160	90	3	40-140/30
77-47-4	Hexachlorocyclopentadiene	2400	3730	156* [a]	3750	156* [a]	1	40-140/30
67-72-1	Hexachloroethane	2400	2020	84	2190	91	8	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	2400	2600	108	2700	112	4	40-140/30
78-59-1	Isophorone	2400	2300	96	2370	99	3	40-140/30
91-57-6	2-Methylnaphthalene	2400	2120	88	2120	88	0	40-140/30
91-20-3	Naphthalene	2400	2290	96	2350	98	3	40-140/30
98-95-3	Nitrobenzene	2400	2290	96	2330	97	2	40-140/30
621-64-7	N-Nitroso-di-n-propylamine	2400	2330	97	2440	102	5	40-140/30
86-30-6	N-Nitrosodiphenylamine	2400	2280	95	2380	99	4	40-140/30
85-01-8	Phenanthrene	2400	2560	107	2640	110	3	40-140/30
129-00-0	Pyrene	2400	2810	117	2950	123	5	40-140/30
120-82-1	1,2,4-Trichlorobenzene	2400	2200	92	2270	95	3	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	74%	76%	30-130%
4165-62-2	Phenol-d5	70%	72%	30-130%
118-79-6	2,4,6-Tribromophenol	76%	77%	30-130%
4165-60-0	Nitrobenzene-d5	75%	77%	30-130%
321-60-8	2-Fluorobiphenyl	78%	79%	30-130%
1718-51-0	Terphenyl-d14	87%	92%	30-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-BS	W16412.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
OP36150-BSD	W16413.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

(a) Outside control limits. Associated samples are non-detect for this compound.

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* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-MS1	W16421.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
OP36150-MSD1	W16422.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
MC26681-15 [a]	W16423.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

CAS No.	Compound	MC26681-15 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic acid	ND		4490	595	13* [b]	568	13* [b]	5	30-130/30
95-57-8	2-Chlorophenol	ND		4490	2620	58	2170	48	19	30-130/30
59-50-7	4-Chloro-3-methyl phenol	ND		4490	3180	71	2780	62	13	30-130/30
120-83-2	2,4-Dichlorophenol	ND		4490	2730	61	2270	50	18	30-130/30
105-67-9	2,4-Dimethylphenol	233	J	4490	3320	69	2790	57	17	30-130/30
51-28-5	2,4-Dinitrophenol	ND		4490	ND	0* [b]	ND	0* [b]	nc	30-130/30
95-48-7	2-Methylphenol	ND		4490	2700	60	2290	51	16	30-130/30
	3&4-Methylphenol	ND		8980	5590	62	4720	52	17	30-130/30
88-75-5	2-Nitrophenol	ND		4490	2340	52	1930	43	19	30-130/30
100-02-7	4-Nitrophenol	ND		4490	2510	56	2250	50	11	30-130/30
87-86-5	Pentachlorophenol	ND		4490	810	18* [b]	645	14* [b]	23	30-130/30
108-95-2	Phenol	61.9	J	4490	2760	60	2310	50	18	30-130/30
95-95-4	2,4,5-Trichlorophenol	ND		4490	2830	63	2410	54	16	30-130/30
88-06-2	2,4,6-Trichlorophenol	ND		4490	2630	59	2380	53	10	30-130/30
83-32-9	Acenaphthene	ND		4490	3230	72	2750	61	16	40-140/30
208-96-8	Acenaphthylene	45.6	J	4490	2580	56	2190	48	16	40-140/30
98-86-2	Acetophenone	210	J	4490	2650	54	2190	44	19	40-140/30
62-53-3	Aniline	ND		4490	1800	40	1480	33* [b]	20	40-140/30
120-12-7	Anthracene	34.8	J	4490	3480	77	2990	66	15	40-140/30
56-55-3	Benzo(a)anthracene	128	J	4490	4090	88	3530	76	15	40-140/30
50-32-8	Benzo(a)pyrene	173	J	4490	3830	81	3190	67	18	40-140/30
205-99-2	Benzo(b)fluoranthene	135	J	4490	4120	89	3640	78	12	40-140/30
191-24-2	Benzo(g,h,i)perylene	145	J	4490	3910	84	3360	71	15	40-140/30
207-08-9	Benzo(k)fluoranthene	127	J	4490	4060	88	3420	73	17	40-140/30
101-55-3	4-Bromophenyl phenyl ether	ND		4490	3930	87	3500	78	12	40-140/30
85-68-7	Butyl benzyl phthalate	ND		4490	4470	100	4060	90	10	40-140/30
91-58-7	2-Chloronaphthalene	ND		4490	2820	63	2430	54	15	40-140/30
106-47-8	4-Chloroaniline	ND		4490	2100	47	1850	41	13	40-140/30
218-01-9	Chrysene	116	J	4490	3910	84	3350	72	15	40-140/30
111-91-1	bis(2-Chloroethoxy)methane	ND		4490	2170	48	1780	40	20	40-140/30
111-44-4	bis(2-Chloroethyl)ether	ND		4490	2790	62	2310	51	19	40-140/30
108-60-1	bis(2-Chloroisopropyl)ether	ND		4490	3910	87	3200	71	20	40-140/30
95-50-1	1,2-Dichlorobenzene	ND		4490	2570	57	2090	46	21	40-140/30
122-66-7	1,2-Diphenylhydrazine	ND		4490	4010	89	3450	77	15	40-140/30
541-73-1	1,3-Dichlorobenzene	ND		4490	2530	56	2090	46	19	40-140/30
106-46-7	1,4-Dichlorobenzene	ND		4490	2540	57	2080	46	20	40-140/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-MS1	W16421.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
OP36150-MSD1	W16422.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
MC26681-15 [a]	W16423.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

CAS No.	Compound	MC26681-15 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
121-14-2	2,4-Dinitrotoluene	ND		4490	2800	62	2390	53	16	40-140/30
606-20-2	2,6-Dinitrotoluene	ND		4490	3050	68	2650	59	14	40-140/30
91-94-1	3,3'-Dichlorobenzidine	ND		4490	2630	59	2420	54	8	40-140/30
53-70-3	Dibenzo(a,h)anthracene	ND		4490	3780	84	3430	76	10	40-140/30
132-64-9	Dibenzofuran	ND		4490	2930	65	2550	57	14	40-140/30
84-74-2	Di-n-butyl phthalate	81.4	J	4490	3730	81	3450	75	8	40-140/30
117-84-0	Di-n-octyl phthalate	ND		4490	4680	104	4330	96	8	40-140/30
84-66-2	Diethyl phthalate	62.3	J	4490	3540	77	3130	68	12	40-140/30
131-11-3	Dimethyl phthalate	ND		4490	3310	74	2930	65	12	40-140/30
117-81-7	bis(2-Ethylhexyl)phthalate	555		4490	5700	115	5010	99	13	40-140/30
206-44-0	Fluoranthene	178	J	4490	3670	78	3050	64	18	40-140/30
86-73-7	Fluorene	ND		4490	3260	73	2880	64	12	40-140/30
118-74-1	Hexachlorobenzene	ND		4490	3740	83	3260	72	14	40-140/30
87-68-3	Hexachlorobutadiene	ND		4490	2650	59	2210	49	18	40-140/30
77-47-4	Hexachlorocyclopentadiene	ND		4490	1550	35* [b]	921	20* [b]	51* [c]	40-140/30
67-72-1	Hexachloroethane	ND		4490	2640	59	2130	47	21	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	120	J	4490	3930	85	3420	73	14	40-140/30
78-59-1	Isophorone	ND		4490	2830	63	2370	53	18	40-140/30
91-57-6	2-Methylnaphthalene	ND		4490	2660	59	2260	50	16	40-140/30
91-20-3	Naphthalene	102	J	4490	2870	62	2380	51	19	40-140/30
98-95-3	Nitrobenzene	ND		4490	2660	59	2250	50	17	40-140/30
621-64-7	N-Nitroso-di-n-propylamine	ND		4490	2920	65	2420	54	19	40-140/30
86-30-6	N-Nitrosodiphenylamine	ND		4490	3450	77	2970	66	15	40-140/30
85-01-8	Phenanthrene	85.3	J	4490	3820	83	3160	68	19	40-140/30
129-00-0	Pyrene	195		4490	4400	94	3670	77	18	40-140/30
120-82-1	1,2,4-Trichlorobenzene	77.4	J	4490	2760	60	2300	49	18	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC26681-15 Limits	
367-12-4	2-Fluorophenol	63%	51%	70%	30-130%
4165-62-2	Phenol-d5	60%	50%	65%	30-130%
118-79-6	2,4,6-Tribromophenol	64%	56%	63%	30-130%
4165-60-0	Nitrobenzene-d5	58%	47%	61%	30-130%
321-60-8	2-Fluorobiphenyl	70%	59%	76%	30-130%
1718-51-0	Terphenyl-d14	94%	84%	98%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36150-MS1	W16421.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
OP36150-MSD1	W16422.D	1	12/13/13	KR	12/11/13	OP36150	MSW733
MC26681-15 [a]	W16423.D	1	12/13/13	KR	12/11/13	OP36150	MSW733

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC26999-2

(a) Sample re-extracted beyond recommended holding time.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Check Std:	MSW733-CC729	**Injection Date:**	12/13/13
Lab File ID:	W16406.D	**Injection Time:**	08:54
Instrument ID:	GCMSW	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	60657	4.28	230392	5.34	145761	6.88	252226	8.18	245370	10.83	216691	12.57
Upper Limit [a]	121314	4.78	460784	5.84	291522	7.38	504452	8.68	490740	11.33	433382	13.07
Lower Limit [b]	30329	3.78	115196	4.84	72881	6.38	126113	7.68	122685	10.33	108346	12.07
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**	**IS 6 AREA**	**RT**
OP36165-MB	51262	4.28	195189	5.34	122504	6.88	212292	8.17	206410	10.82	189778	12.56
OP36165-BS	63800	4.28	229461	5.34	138542	6.88	233994	8.18	208391	10.82	182346	12.57
OP36150-MB	70183	4.28	268195	5.34	164190	6.88	276968	8.17	257828	10.82	232807	12.56
OP36150-BS	73744	4.28	269070	5.34	165937	6.88	288307	8.18	264567	10.83	224429	12.57
OP36150-BSD	72424	4.28	268169	5.34	164786	6.88	281436	8.18	249614	10.83	211778	12.57
OP36159-MB	74934	4.28	283866	5.34	171793	6.88	290052	8.17	273394	10.82	239312	12.56
OP36159-BS	76683	4.28	271043	5.34	169125	6.88	288429	8.18	255114	10.82	225676	12.57
OP36159-BSD	79128	4.28	297133	5.34	185276	6.88	318516	8.18	293739	10.82	249128	12.57
OP36159-MS	80685	4.28	289540	5.34	168952	6.88	286315	8.18	259099	10.82	220823	12.57
OP36159-MSD	82520	4.28	297148	5.34	178993	6.88	304615	8.18	282649	10.83	246869	12.57
MC27058-3	78603	4.28	285149	5.34	170593	6.88	285069	8.17	262849	10.82	227865	12.56
ZZZZZZ	67961	4.28	250906	5.34	152785	6.88	246263	8.17	202893	10.82	168989	12.56
OP36150-MS1	80959	4.28	298424	5.34	181122	6.88	290047	8.18	241973	10.83	203276	12.57
OP36150-MSD1	82001	4.28	301199	5.34	180583	6.88	292492	8.18	245479	10.82	204770	12.57
MC26681-15	82275	4.28	302057	5.34	180311	6.88	285391	8.17	232452	10.82	199381	12.56

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Check Std:	MSW734-CC729	**Injection Date:**	12/13/13
Lab File ID:	W16440.D	**Injection Time:**	21:54
Instrument ID:	GCMSW	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	70767	4.26	268547	5.32	169254	6.86	288779	8.16	286300	10.80	257013	12.53
Upper Limit [a]	141534	4.76	537094	5.82	338508	7.36	577558	8.66	572600	11.30	514026	13.03
Lower Limit [b]	35384	3.76	134274	4.82	84627	6.36	144390	7.66	143150	10.30	128507	12.03
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**	**IS 6 AREA**	**RT**
OP36178-MB	83892	4.26	314494	5.32	199927	6.86	340269	8.16	314004	10.80	262086	12.53
OP36178-BS	88240	4.26	324093	5.32	203060	6.86	346254	8.16	305543	10.80	250067	12.53
ZZZZZZ	91043	4.26	332229	5.32	204811	6.86	340006	8.16	292857	10.80	239412	12.53
ZZZZZZ	88498	4.26	329430	5.32	202382	6.86	334793	8.16	265604	10.79	217344	12.53
ZZZZZZ	82802	4.26	309274	5.32	190351	6.86	319231	8.16	261679	10.80	216852	12.53
MC26999-2	70532	4.26	262386	5.32	155132	6.86	246705	8.16	226186	10.81	205495	12.55
ZZZZZZ	77540	4.26	290153	5.32	172141	6.86	258234	8.16	196187	10.80	170877	12.54
ZZZZZZ	68831	4.26	259723	5.32	156427	6.86	237886	8.16	196794	10.80	175153	12.54
ZZZZZZ	76585	4.26	287218	5.33	174213	6.86	289101	8.16	242087	10.80	204636	12.53
ZZZZZZ	66888	4.26	252067	5.33	155645	6.86	256705	8.16	233158	10.80	192929	12.53
ZZZZZZ	72748	4.26	270736	5.32	165615	6.86	274809	8.16	250125	10.79	206259	12.53
ZZZZZZ	76684	4.26	292493	5.32	177255	6.86	300723	8.16	259928	10.80	212613	12.53
OP36085-MS	66176	4.26	248142	5.33	154304	6.86	266256	8.16	240233	10.80	202801	12.53
OP36085-MSD	64870	4.26	246488	5.32	153569	6.86	266146	8.16	247926	10.80	211550	12.53
MC27008-19	66968	4.26	251094	5.33	155423	6.86	265914	8.16	246080	10.79	211248	12.53
ZZZZZZ	72086	4.26	262867	5.32	163594	6.86	267352	8.16	227522	10.80	200221	12.53
ZZZZZZ	62169	4.26	227997	5.32	142999	6.86	229987	8.16	214546	10.80	185466	12.53
ZZZZZZ	61396	4.26	240465	5.36	140056	6.86	231706	8.16	220564	10.80	195182	12.53
ZZZZZZ	64237	4.26	238058	5.33	149306	6.86	254355	8.16	233959	10.80	202642	12.53
ZZZZZZ	65763	4.26	244278	5.33	151322	6.86	259133	8.16	239377	10.80	205600	12.53

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Internal Standard Area Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Check Std:	MSW736-CC729	**Injection Date:**	12/17/13
Lab File ID:	W16512.D	**Injection Time:**	08:01
Instrument ID:	GCMSW	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	38857	4.55	144613	5.62	93941	7.16	168447	8.46	184955	11.18	152006	12.96
Upper Limit [a]	77714	5.05	289226	6.12	187882	7.66	336894	8.96	369910	11.68	304012	13.46
Lower Limit [b]	19429	4.05	72307	5.12	46971	6.66	84224	7.96	92478	10.68	76003	12.46

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP36181-MB	38297	4.54	140144	5.61	92565	7.16	163785	8.46	172987	11.18	153838	12.96
OP36181-BS	41768	4.54	147590	5.61	97201	7.16	172456	8.46	182152	11.18	157584	12.96
OP36181-MS	40572	4.54	152995	5.61	101607	7.16	179085	8.46	190172	11.18	164098	12.96
OP36181-MSD	38059	4.54	142111	5.61	92351	7.16	163101	8.46	172540	11.18	148693	12.96
ZZZZZZ	39529	4.54	147564	5.61	95605	7.16	168298	8.45	176143	11.17	153913	12.96
ZZZZZZ	33702	4.54	125820	5.61	82135	7.16	149010	8.45	163118	11.17	144584	12.96
MC27008-24	40766	4.54	150987	5.61	98223	7.16	172662	8.45	189139	11.17	161769	12.96
OP36194-MB	33765	4.54	128464	5.61	81932	7.15	146477	8.45	160955	11.17	139947	12.96
OP36194-BS	40982	4.54	152606	5.61	100966	7.16	180108	8.46	192788	11.18	167349	12.96
OP36194-MS	35160	4.54	133167	5.61	87020	7.16	154074	8.46	163462	11.18	144390	12.96
OP36194-MSD	39451	4.54	147123	5.61	96945	7.16	170076	8.46	180379	11.18	156110	12.96
MC27058-8	35388	4.54	131693	5.61	87205	7.16	152961	8.45	164203	11.17	143003	12.96
ZZZZZZ	40195	4.54	148101	5.61	99581	7.16	171411	8.45	183269	11.17	162411	12.96
ZZZZZZ	37174	4.54	137241	5.61	90821	7.15	157367	8.45	168447	11.17	149512	12.96
ZZZZZZ	38793	4.54	146044	5.61	94341	7.15	166144	8.45	182992	11.17	157928	12.96
ZZZZZZ	37051	4.54	140026	5.61	91597	7.15	159613	8.45	168504	11.17	149971	12.96
MC26999-2	46774	4.54	179624	5.61	117588	7.16	202274	8.46	221811	11.18	194211	12.96

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Surrogate Recovery Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC26999-2	W16446.D	69.0	69.0	78.0	71.0	80.0	93.0
MC26999-2	W16529.D	54.0	65.0	46.0	58.0	64.0	69.0
OP36150-BS	W16412.D	74.0	70.0	76.0	75.0	78.0	87.0
OP36150-BSD	W16413.D	76.0	72.0	77.0	77.0	79.0	92.0
OP36150-MB	W16411.D	70.0	67.0	67.0	69.0	72.0	86.0
OP36150-MS1	W16421.D	63.0	60.0	64.0	58.0	70.0	94.0
OP36150-MSD1	W16422.D	51.0	50.0	56.0	47.0	59.0	84.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	30-130%
S2 = Phenol-d5	30-130%
S3 = 2,4,6-Tribromophenol	30-130%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36155-MB	DE1207.D	1	12/12/13	ZB	12/11/13	OP36155	GDE275

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

MC26999-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	18000	18000	ug/kg	
	C9-C18 Aliphatics	ND	8900	8900	ug/kg	
	C19-C36 Aliphatics	ND	8900	8900	ug/kg	
	C11-C22 Aromatics	ND	18000	18000	ug/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	94%	40-140%
321-60-8	2-Fluorobiphenyl	102%	40-140%
580-13-2	2-Bromonaphthalene	48%	40-140%
3386-33-2	1-Chlorooctadecane	73%	40-140%

8.1.1

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Method Blank Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36154-MB	YZ86699.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434

The QC reported here applies to the following samples: **Method:** SW846 8082

MC26999-2

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	32	15	ug/kg	
11104-28-2	Aroclor 1221	ND	32	19	ug/kg	
11141-16-5	Aroclor 1232	ND	32	15	ug/kg	
53469-21-9	Aroclor 1242	ND	32	16	ug/kg	
12672-29-6	Aroclor 1248	ND	32	14	ug/kg	
11097-69-1	Aroclor 1254	ND	32	24	ug/kg	
11096-82-5	Aroclor 1260	ND	32	16	ug/kg	
37324-23-5	Aroclor 1262	ND	32	28	ug/kg	
11100-14-4	Aroclor 1268	ND	32	14	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	102%	30-150%
877-09-8	Tetrachloro-m-xylene	105%	30-150%
2051-24-3	Decachlorobiphenyl	114%	30-150%
2051-24-3	Decachlorobiphenyl	113%	30-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36155-BS	DE1224.D	1	12/13/13	ZB	12/11/13	OP36155	GDE276
OP36155-BSD	DE1225.D	1	12/13/13	ZB	12/11/13	OP36155	GDE276

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

MC26999-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
	C11-C22 Aromatics (Unadj.)	69700	58500	84	65800	94	12	40-140/25
	C9-C18 Aliphatics	26200	17300	66	19600	75	12	40-140/25
	C19-C36 Aliphatics	34900	26300	75	29000	83	10	40-140/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	77%	85%	40-140%
321-60-8	2-Fluorobiphenyl	83%	89%	40-140%
580-13-2	2-Bromonaphthalene	79%	74%	40-140%
3386-33-2	1-Chlorooctadecane	72%	80%	40-140%

Sample	Compound	Col #1	Col #2	Breakthrough	Limit
OP36155-BS	2-Methylnaphthalene	2990	29.5	1.0%	5.0
OP36155-BS	Naphthalene	3160	62.6	1.9%	5.0
OP36155-BSD	2-Methylnaphthalene	3360	39.3	1.2%	5.0
OP36155-BSD	Naphthalene	3430	97.2	2.8%	5.0

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36154-BS	YZ86700.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434
OP36154-BSD	YZ86701.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434

The QC reported here applies to the following samples: **Method:** SW846 8082

MC26999-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	251	255	102	271	102	6	40-140/30
11104-28-2	Aroclor 1221		ND		ND		nc	40-140/30
11141-16-5	Aroclor 1232		ND		ND		nc	40-140/30
53469-21-9	Aroclor 1242		ND		ND		nc	40-140/30
12672-29-6	Aroclor 1248		ND		ND		nc	40-140/30
11097-69-1	Aroclor 1254		ND		ND		nc	40-140/30
11096-82-5	Aroclor 1260	251	283	113	286	108	1	40-140/30
37324-23-5	Aroclor 1262		ND		ND		nc	40-140/30
11100-14-4	Aroclor 1268		ND		ND		nc	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	103%	103%	30-150%
877-09-8	Tetrachloro-m-xylene	104%	105%	30-150%
2051-24-3	Decachlorobiphenyl	125%	116%	30-150%
2051-24-3	Decachlorobiphenyl	125%	116%	30-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36155-MS	BJ24135.D	1	12/12/13	ZB	12/12/13	OP36155	GBJ899
OP36155-MSD	BJ24136.D	1	12/12/13	ZB	12/12/13	OP36155	GBJ899
MC26999-2	BJ24137.D	1	12/12/13	ZB	12/12/13	OP36155	GBJ899

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

MC26999-2

CAS No.	Compound	MC26999-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
	C11-C22 Aromatics (Unadj.)	278000		78600	748000	598* [a]	331000	65	77* [a]	40-140/25
	C9-C18 Aliphatics	ND		29500	32100	109	26000	85	21	40-140/25
	C19-C36 Aliphatics	23700		39300	62600	99	108000	207* [a]	53* [a]	40-140/25

CAS No.	Surrogate Recoveries	MS	MSD	MC26999-2	Limits
84-15-1	o-Terphenyl	105%	83%	89%	40-140%
321-60-8	2-Fluorobiphenyl	104%	89%	94%	40-140%
580-13-2	2-Bromonaphthalene	69%	69%	67%	40-140%
3386-33-2	1-Chlorooctadecane	93%	86%	78%	40-140%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36154-MS	YZ86702.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434
OP36154-MSD	YZ86703.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434
MC26999-2	YZ86704.D	1	12/13/13	CZ	12/11/13	OP36154	GYZ7434

The QC reported here applies to the following samples: **Method:** SW846 8082

MC26999-2

CAS No.	Compound	MC26999-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		299	193	65	222	73	14	40-140/50
11104-28-2	Aroclor 1221	ND			ND		ND		nc	40-140/50
11141-16-5	Aroclor 1232	ND			ND		ND		nc	40-140/50
53469-21-9	Aroclor 1242	ND			ND		ND		nc	40-140/50
12672-29-6	Aroclor 1248	ND			ND		ND		nc	40-140/50
11097-69-1	Aroclor 1254	ND			ND		ND		nc	40-140/50
11096-82-5	Aroclor 1260	ND		299	300	100	255	83	16	40-140/50
37324-23-5	Aroclor 1262	ND			ND		ND		nc	40-140/50
11100-14-4	Aroclor 1268	ND			ND		ND		nc	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	MC26999-2	Limits
877-09-8	Tetrachloro-m-xylene	70%	70%	75%	30-150%
877-09-8	Tetrachloro-m-xylene	67%	64%	71%	30-150%
2051-24-3	Decachlorobiphenyl	82%	91%	79%	30-150%
2051-24-3	Decachlorobiphenyl	91%	102%	103%	30-150%

* = Outside of Control Limits.

Semivolatile Surrogate Recovery Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8082 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
MC26999-2	YZ86704.D	75.0	71.0	79.0	103.0
OP36154-BS	YZ86700.D	103.0	104.0	125.0	125.0
OP36154-BSD	YZ86701.D	103.0	105.0	116.0	116.0
OP36154-MB	YZ86699.D	102.0	105.0	114.0	113.0
OP36154-MS	YZ86702.D	70.0	67.0	82.0	91.0
OP36154-MSD	YZ86703.D	70.0	64.0	91.0	102.0

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	30-150%
S2 = Decachlorobiphenyl	30-150%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Semivolatile Surrogate Recovery Summary

Job Number: MC26999
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: MADEP EPH REV 1.1 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]	S3 [a]	S4 [b]
MC26999-2	BJ24137.D	89.0	94.0	67.0	78.0
OP36155-BS	DE1224.D	77.0	83.0	79.0	72.0
OP36155-BSD	DE1225.D	85.0	89.0	74.0	80.0
OP36155-MB	DE1207.D	94.0	102.0	48.0	73.0
OP36155-MS	BJ24135.D	105.0	104.0	69.0	93.0
OP36155-MSD	BJ24136.D	83.0	89.0	69.0	86.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	40-140%
S2 = 2-Fluorobiphenyl	40-140%
S3 = 2-Bromonaphthalene	40-140%
S4 = 1-Chlorooctadecane	40-140%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

New England ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 12/11/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	20	.61	3.6		
Antimony	1.0	.11	.15	0.13	<1.0
Arsenic	1.0	.22	.21	0.11	<1.0
Barium	5.0	.019	.073	0.080	<5.0
Beryllium	0.40	.008	.024	0.0	<0.40
Boron	10	.081	.11		
Cadmium	0.40	.022	.042	0.010	<0.40
Calcium	500	.85	6.3		
Chromium	1.0	.074	.095	0.060	<1.0
Cobalt	5.0	.028	.047		
Copper	2.5	.086	.56		
Gold	5.0	.18	.43		
Iron	10	.44	.87		
Lead	1.0	.16	.17	0.010	<1.0
Magnesium	500	4.3	5.1		
Manganese	1.5	.017	.04		
Molybdenum	10	.04	.07		
Nickel	4.0	.045	.044	0.0	<4.0
Palladium	5.0	.2	.64		
Platinum	5.0	.87	1.5		
Potassium	500	2.4	8.6		
Selenium	1.0	.14	.35	-0.090	<1.0
Silicon	10	.21	3.3		
Silver	0.50	.047	.13	-0.050	<0.50
Sodium	500	4.2	3.3		
Sulfur	5.0	.29	.82		
Strontium	1.0	.01	.03		
Thallium	1.0	.17	.13	0.070	<1.0
Tin	10	.15	.14		
Titanium	5.0	.048	.14		
Tungsten	10	.93	.94		
Vanadium	1.0	.09	.13	0.010	<1.0
Zinc	2.0	.091	.16	0.44	<2.0

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal			
Zirconium	5.0	.076	.088

Associated samples MP22240: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 12/11/13

Metal	MC26975-4 Original	MS	Spikelot MPICP	% Rec	QC Limits
Aluminum					
Antimony	0.18	36.6	52.7	69.1 (a)	75-125
Arsenic	1.8	56.4	52.7	103.6	75-125
Barium	16.0	230	211	101.5	75-125
Beryllium	0.24	52.8	52.7	99.7	75-125
Boron					
Cadmium	0.0	52.5	52.7	99.6	75-125
Calcium					
Chromium	7.3	60.1	52.7	100.2	75-125
Cobalt					
Copper	anr				
Gold					
Iron					
Lead	4.8	108	105	97.9	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel	7.6	57.1	52.7	93.9	75-125
Palladium					
Platinum					
Potassium					
Selenium	0.0	51.3	52.7	97.3	75-125
Silicon					
Silver	0.0	21.6	21.1	102.4	75-125
Sodium					
Sulfur					
Strontium					
Thallium	0.0	52.1	52.7	98.8	75-125
Tin					
Titanium					
Tungsten					
Vanadium	11.0	64.3	52.7	101.1	75-125
Zinc	14.8	65.4	52.7	96.0	75-125

ACCUTEST LABORATORIES
MC26999

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

Zirconium

Associated samples MP22240: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

9.1.2 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 12/11/13

Metal	MC26975-4 Original	MSD	Spikelot MPICP	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	0.18	37.9	53.7	70.2 (a)	3.5	20
Arsenic	1.8	57.4	53.7	103.4	1.8	20
Barium	16.0	237	215	102.8	3.0	20
Beryllium	0.24	53.8	53.7	99.6	1.9	20
Boron						
Cadmium	0.0	53.6	53.7	99.7	2.1	20
Calcium						
Chromium	7.3	61.6	53.7	101.0	2.5	20
Cobalt						
Copper	anr					
Gold						
Iron						
Lead	4.8	110	107	97.9	1.8	20
Magnesium						
Manganese						
Molybdenum						
Nickel	7.6	57.6	53.7	93.0	0.9	20
Palladium						
Platinum						
Potassium						
Selenium	0.0	51.7	53.7	96.2	0.8	20
Silicon						
Silver	0.0	21.9	21.5	101.9	1.4	20
Sodium						
Sulfur						
Strontium						
Thallium	0.0	53.1	53.7	98.8	1.9	20
Tin						
Titanium						
Tungsten						
Vanadium	11.0	66.0	53.7	102.3	2.6	20
Zinc	14.8	66.0	53.7	95.3	0.9	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal
Zirconium

Associated samples MP22240: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike duplicate recovery indicates possible matrix interference and/or sample nonhomogeneity.

9.1.2 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:		12/11/13				12/11/13		
Metal	BSP Result	Spikelot MPICP	% Rec	QC Limits	BSD Result	Spikelot MPICP	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony	51.0	50	102.0	80-120	50.7	50	101.4	0.6	20
Arsenic	53.4	50	106.8	80-120	53.2	50	106.4	0.4	20
Barium	206	200	103.0	80-120	206	200	103.0	0.0	20
Beryllium	50.7	50	101.4	80-120	51.1	50	102.2	0.8	20
Boron									
Cadmium	50.7	50	101.4	80-120	50.3	50	100.6	0.8	20
Calcium									
Chromium	52.0	50	104.0	80-120	52.1	50	104.2	0.2	20
Cobalt									
Copper	anr								
Gold									
Iron									
Lead	101	100	101.0	80-120	100	100	100.0	1.0	20
Magnesium									
Manganese									
Molybdenum									
Nickel	48.5	50	97.0	80-120	48.3	50	96.6	0.4	20
Palladium									
Platinum									
Potassium									
Selenium	50.3	50	100.6	80-120	49.9	50	99.8	0.8	20
Silicon									
Silver	20.9	20	104.5	80-120	20.8	20	104.0	0.5	20
Sodium									
Sulfur									
Strontium									
Thallium	51.6	50	103.2	80-120	51.3	50	102.6	0.6	20
Tin									
Titanium									
Tungsten									
Vanadium	52.4	50	104.8	80-120	52.6	50	105.2	0.4	20
Zinc	51.3	50	102.6	80-120	50.7	50	101.4	1.2	20

ACCUTEST LABORATORIES
MC26999

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal
Zirconium

Associated samples MP22240: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.1.3 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 12/11/13

Metal	LCS Result	Spikelot MPLCS78	% Rec	QC Limits
Aluminum				
Antimony	78.9	92.9	84.9	8-192
Arsenic	92.1	94.5	97.5	82-117
Barium	161	166	97.0	83-116
Beryllium	52.1	52.6	99.0	84-116
Boron				
Cadmium	57.9	59.9	96.7	84-116
Calcium				
Chromium	69.9	69.3	100.9	81-119
Cobalt				
Copper	anr			
Gold				
Iron				
Lead	84.8	91.7	92.5	82-118
Magnesium				
Manganese				
Molybdenum				
Nickel	52.7	56.6	93.1	82-118
Palladium				
Platinum				
Potassium				
Selenium	158	159	99.4	79-121
Silicon				
Silver	34.4	33.9	101.5	66-134
Sodium				
Sulfur				
Strontium				
Thallium	118	119	99.2	81-119
Tin				
Titanium				
Tungsten				
Vanadium	55.2	56.3	98.0	73-127
Zinc	126	137	92.0	81-119

ACCUTEST LABORATORIES
MC26999

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal
Zirconium

Associated samples MP22240: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.1.3

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SERIAL DILUTION RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/11/13

Metal	MC26975-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	1.70	0.00	100.0(a)	0-10
Arsenic	17.0	19.3	13.5 (a)	0-10
Barium	152	160	5.2	0-10
Beryllium	2.30	2.10	8.7	0-10
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	68.9	71.4	3.6	0-10
Cobalt				
Copper	anr			
Gold				
Iron				
Lead	45.7	45.0	1.5	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	72.4	75.5	4.3	0-10
Palladium				
Platinum				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Sulfur				
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	105	111	5.9	0-10
Zinc	140	149	6.5	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22240
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

Zirconium

Associated samples MP22240: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

9.1.4 9

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22242
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/12/13

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0029	.0097	-0.0022	<0.033

Associated samples MP22242: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22242
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/12/13

Metal	MC26741-6 Original	MS	Spikelot HGRWS1	% Rec	QC Limits
Mercury	0.012	0.58	0.563	100.8	80-120

Associated samples MP22242: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

9.2.2 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22242
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/12/13

Metal	MC26741-6 Original	MSD	Spikelot HGRWS1	% Rec	MSD RPD	QC Limit
Mercury	0.012	0.58	0.554	102.5	0.0	20

Associated samples MP22242: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22242
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date:		12/12/13				12/12/13			
Metal	BSP Result	Spikelot HGRWS1	% Rec	QC Limits	BSD Result	Spikelot HGRWS1	% Rec	BSD RPD	QC Limit
Mercury	0.49	0.5	98.0	80-120	0.50	0.5	100.0	2.0	20

Associated samples MP22242: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.2.3
9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22242
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/12/13

Metal	LCS Result	Spikelot HGLCS78	% Rec	QC Limits
Mercury	4.3	4.05	106.2	72-128

Associated samples MP22242: MC26999-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

New England ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP17020/GN45473	0.40	0.0	mg/kg	40	40.1	100.3	80-120%
Chromium, Hexavalent	GP17020/GN45473			mg/kg	721	698	96.8	80-120%
Cyanide Reactivity	GP17008/GN45442	1.5	0.0	mg/kg	250	25.2	10.1	-%
Specific Conductivity	GN45437	0.50	0.0	umhos/cm				
Sulfide Reactivity	GP17009/GN45443	50	0.0	mg/kg	500	400	80.0	-%

Associated Samples:
Batch GN45437: MC26999-2
Batch GP17008: MC26999-2
Batch GP17009: MC26999-2
Batch GP17020: MC26999-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP17020/GN45473	MC26999-2	mg/kg	0.0	0.0	0.0	0-20%
Cyanide Reactivity	GP17008/GN45442	MC26915-1	mg/kg	1.7 U	0.0	0.0	0-20%
Ignitability (Flashpoint)	GN45344	MC26712-1	Deg. F	>230	>230	0.0	0-20%
Redox Potential Vs H2	GN45439	MC26999-2	mv	377	369	2.1	0-20%
Solids, Percent	GN45445	MC27002-23	%	80.2	80.2	0.0	0-20%
Specific Conductivity	GN45437	MC26999-2	umhos/cm	610	611	0.2	0-20%
Sulfide Reactivity	GP17009/GN45443	MC26915-1	mg/kg	57 U	0.0	0.0	0-20%
pH	GN45435	MC26956-1	su	5.7	5.7	0.0	0-20%

Associated Samples:
Batch GN45344: MC26999-2
Batch GN45435: MC26999-2
Batch GN45437: MC26999-2
Batch GN45439: MC26999-2
Batch GN45445: MC26999-1, MC26999-2
Batch GP17008: MC26999-2
Batch GP17009: MC26999-2
Batch GP17020: MC26999-2
(*) Outside of QC limits

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MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: MC26999
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP17020/GN45473	MC26999-2	mg/kg	0.0	46.6	40.6	87.1	75-125%
Chromium, Hexavalent	GP17020/GN45473	MC26999-2	mg/kg	0.0	986	973	98.7	75-125%
Cyanide Reactivity	GP17008/GN45442	MC26915-1	mg/kg	1.7 U	284	27.7	9.7	-%
Sulfide Reactivity	GP17009/GN45443	MC26915-1	mg/kg	57 U	569	455	80.0	-%

Associated Samples:
Batch GP17008: MC26999-2
Batch GP17009: MC26999-2
Batch GP17020: MC26999-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

New England ACCUTEST LABORATORIES

12/30/13

Technical Report for

GEI Consultants, Inc.

GEI Tufts Street Somerville MA

045163

Accutest Job Number: MC26999R

Sampling Date: 12/10/13

Report to:

GEI Consultants, Inc.

jroman@geiconsultants.com
labdata@geiconsultants.com; smoseley@geiconsultants.com
ATTN: Joe Roman

Total number of pages in report: 48

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Reza Tand
Lab Director

Client Service contact: Frank DAgostino 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) DoD ELAP (L-A-B L2235)

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Accutest Laboratories

Sample Summary

GEI Consultants, Inc.

Job No: MC26999R

GEI Tufts Street Somerville MA
Project No: 045163

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
MC26999-2R	12/10/13	13:55	MLK	12/10/13	SO	Soil	145163-34KNOWLTON-COMP

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

ACCUTEST LABORATORIES

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GEI Consultants, Inc. **Job No** MC26999R

Site: GEI Tufts Street Somerville MA **Report Date** 12/30/2013 2:10:15 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 12/10/2013 and were received at Accutest on 12/10/2013 properly preserved, at 0.2 Deg. C and intact. These Samples received an Accutest job number of MC26999R. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method SW846 8015

Matrix: SO **Batch ID:** GWX3399

- All samples were analyzed within the recommended method holding time.
- Sample(s) MC26999-2RMS, MC26999-2RMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8081

Matrix: SO **Batch ID:** OP36236

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26999-2RMS, MC26999-2RMSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Dieldrin, Endosulfan sulfate, Endosulfan-I, Endosulfan-II, Endrin, Endrin ketone, Methoxychlor are outside control limits. Outside control limits due to possible matrix interference.
- RPD(s) for MSD for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-BHC, delta-BHC, Dieldrin, Endosulfan sulfate, Endosulfan-I, Endosulfan-II, Endrin, Endrin ketone, Heptachlor, Methoxychlor are outside control limits for sample OP36236-MSD. Outside control limits due to possible matrix interference.
- OP36236-MSD for 4,4'-DDT, Endrin, Endosulfan-I, Endosulfan-II, Methoxychlor, Endrin ketone: Outside control limits due to possible matrix interference.

Extractables by GC By Method SW846 8151

Matrix: SO **Batch ID:** OP36240

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC26999-2RMS, MC26999-2RMSD were used as the QC samples indicated.
- MS/MSD Recovery(s) for 2,4,5-T are outside control limits. Outside control limits due to possible matrix interference.
- MC26999-2R for 2,4-D: Confirmation value >40% RPD.
- OP36240-BS for 2,4,5-T: Outside control limits. Associated samples are non-detect for this compound.

Extractables by GC By Method SW846-8015

Matrix: SO	Batch ID: OP36226

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27084-1MS, MC27084-1MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for TPH-DRO (Semi-VOA) are outside control limits. Outside control limits due to possible matrix interference.

Metals By Method SW846 6010C

Matrix: LEACHATE	Batch ID: MP22284

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27177-1MS, MC27177-1MSD, MC27177-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Lead are outside control limits for sample MP22284-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC26999R).

Summary of Hits

Job Number: MC26999R
Account: GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA
Collected: 12/10/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC26999-2R	**145163-34KNOWLTON-COMP**					
2,4-D [a]		10.6 J	23	1.9	ug/kg	SW846 8151
TPH-DRO (Semi-VOA)		194	19	4.7	mg/kg	SW846-8015
Lead		0.073	0.010		mg/l	SW846 6010C

(a) Confirmation value > 40% RPD.

New England ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2R	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8015	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	WX70770.D	1	12/17/13	TB	n/a	n/a	GWX3399
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	10.2 g	10.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	ND	6.6	1.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	104%		61-116%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2R	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846 8151 SW846 3550B	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ86899.D	1	12/17/13	CZ	12/17/13	OP36240	GYZ7444
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	5.0 ml
Run #2		

Herbicide List

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D [a]	10.6	23	1.9	ug/kg	J
93-72-1	2,4,5-TP (Silvex)	ND	23	2.3	ug/kg	
93-76-5	2,4,5-T	ND	23	1.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	107%		30-150%
19719-28-9	2,4-DCAA	104%		30-150%

(a) Confirmation value > 40% RPD.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 145163-34KNOWLTON-COMP
Lab Sample ID: MC26999-2R
Matrix: SO - Soil
Method: SW846 8081 SW846 3546
Project: GEI Tufts Street Somerville MA

Date Sampled: 12/10/13
Date Received: 12/10/13
Percent Solids: 85.5

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BE39825.D	1	12/18/13	NK	12/16/13	OP36236	GBE2052
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

Pesticide MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	7.7	2.3	ug/kg	
319-84-6	alpha-BHC	ND	7.7	1.9	ug/kg	
319-85-7	beta-BHC	ND	7.7	2.5	ug/kg	
319-86-8	delta-BHC	ND	7.7	1.4	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	7.7	2.3	ug/kg	
12789-03-6	Chlordane	ND	77	15	ug/kg	
60-57-1	Dieldrin	ND	7.7	2.4	ug/kg	
72-54-8	4,4'-DDD	ND	7.7	2.5	ug/kg	
72-55-9	4,4'-DDE	ND	7.7	3.1	ug/kg	
50-29-3	4,4'-DDT	ND	7.7	2.4	ug/kg	
72-20-8	Endrin	ND	7.7	3.0	ug/kg	
1031-07-8	Endosulfan sulfate	ND	7.7	2.6	ug/kg	
959-98-8	Endosulfan-I	ND	7.7	3.0	ug/kg	
33213-65-9	Endosulfan-II	ND	7.7	2.5	ug/kg	
76-44-8	Heptachlor	ND	7.7	2.3	ug/kg	
1024-57-3	Heptachlor epoxide	ND	7.7	2.4	ug/kg	
118-74-1	Hexachlorobenzene	ND	7.7	2.4	ug/kg	
72-43-5	Methoxychlor	ND	7.7	3.1	ug/kg	
53494-70-5	Endrin ketone	ND	7.7	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	61%		30-150%
877-09-8	Tetrachloro-m-xylene	39%		30-150%
2051-24-3	Decachlorobiphenyl	148%		30-150%
2051-24-3	Decachlorobiphenyl	80%		30-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2R	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
Method:	SW846-8015 SW846 3546	**Percent Solids:**	85.5
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BI30097.D	1	12/18/13	KN	12/16/13	OP36226	GBI1087
Run #2							

	Initial Weight	Final Volume
Run #1	15.5 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (Semi-VOA)	194	19	4.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	76%		40-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	145163-34KNOWLTON-COMP		
Lab Sample ID:	MC26999-2R	**Date Sampled:**	12/10/13
Matrix:	SO - Soil	**Date Received:**	12/10/13
		Percent Solids:	85.5
Project:	GEI Tufts Street Somerville MA		

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	0.073	D008	5.0	0.010	mg/l	1	12/18/13	12/18/13	SA	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA16576
(2) Prep QC Batch: MP22284

RL = Reporting Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)

New England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle

Chain-of-Custody Record

Laboratory: Accutest

Laboratory Job # (Lab use only) MC26999R

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Tufts Street
Project Location: Sommerville, MA
Project Number: 045163
Project Manager: J. Roman
(o) 781-721-4136 (c) 619-977-2951

12/10/13 TP
Page _1 of _1

Send Report to: Sarah Moseley
Send EDD to: labdata@geiconsultants.com

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required?	**YES**	NO	NA
Are Drinking Water Samples Submitted?	YES	**NO**	NA
If Yes, Have Drinking Water Sampling Requirements Been Met?	YES	NO	**NA**

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials
MC26999-1	045163-34Knowlton-TP102-S2	12/10/13	1350	SO	3	MJL
-2	045163-34Knowlton-COMP	12/10/13	1355	SO	3	MJL

Preservative

MEOH							

Analysis

VOCs	% Solids	EPH (fractions only)	RCRA 8 Metals, Hex Chrome	SVOCs/ PCBs	Conductivity/ Ignitibility	pH/ ORP	Sulfide and Cyanide Reactivity
X	X						
		X	X	X	X	X	X

Sample Handling

Samples Field Filtered: YES NO NA

Sampled Shipped With Ice: YES NO

Sample Specific Remarks

10FS2
10D

MCP Level Needed: GEI requires that, within the specified method, the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Relinquished by: (signature)	Date:	Time:	Received by: (signature)
1. Margaret Y. Kelly	12/10/13	1516	1. Brunot
2.			2.
3.			3.
4.			4.

Turnaround Time (Business days):

Normal ____ Other ____
10-Day ____ 7-Day ____
5-Day ____ 3-Day _X_

Before submitting rush turnaround samples, you must notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

TAT approved by Frank
Call prodect managaer if metal(s) exceed 20X haz waste rule
pH and ORP have a 24 hour hold time

RUSH!

0.2°C

12/10/2013
T:\FIELD FORMS\Chain of Custody_MCP 2013

MC26999R: Chain of Custody
Page 1 of 4

Frank D'Agostino

MC26999R

From: Roman, Joe <JRoman@geiconsultants.com>
Sent: Monday, December 16, 2013 4:51 PM
To: Frank D'Agostino
Subject: Additional analysis for job#mc26999

Hi Frank,

Thanks for all the help today:

--as we discuss, please run the additional metals (I'm assuming that includes antimony, beryllium, nickel, thallium, vanadium, and zinc?)

--please run TPH (gro and dro as we discussed)

--please run pest / herbs, totals only and no TCLP

Please let me know if there will be sample volume issues now that we are also adding TPH. Please also give me an estimated TAT for these additional analyses.

Joe

Joseph Roman
Project Manager/Senior Scientist
GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, Massachusetts 01801
Phone: 781-721-4136
Cell: 619-977-2951
jroman@geiconsultants.com

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MC26999R: Chain of Custody
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ACCUTEST LABORATORIES
MC26999R

Sarah S. Moseley | Staff Engineer
GEI Consultants, Inc. | 400 Unicorn Park Drive | Woburn, MA 01801
781.721.4000 main | 781.721.4120 direct | 978.846.5943 mobile
Geotechnical · Environmental · Water Resources · Ecological ·

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MC26999R: Chain of Custody
Page 3 of 4

Frank D'Agostino

MC26999R

From: Moseley, Sarah <SMoseley@geiconsultants.com>
Sent: Monday, December 16, 2013 9:41 AM
To: Frank D'Agostino
Subject: RE: MC26999: Tufts Street - when will data be available? (due last Friday 12/13)

Please run TCLP Pb. Thanks.

From: Frank D'Agostino [mailto:frankd@accutest.com]
Sent: Monday, December 16, 2013 9:36 AM
To: Moseley, Sarah
Cc: Reza Tand
Subject: RE: MC26999: Tufts Street - when will data be available? (due last Friday 12/13)

Sarah,

I will get you an update ASAP.

I also sent you an email on Friday pertaining to the TCLP Pb which I have not heard back from you.

Please advise.

Frank D'Agostino
Project Manager
Accutest Laboratories of NE
Voice: 508.481.6200 Ext. 2104
Fax: 508.481.7753
frankd@accutest.com

ACCUTEST LABORATORIES

"The National Testing Laboratory with Total Performance you can count on"

From: Moseley, Sarah [mailto:SMoseley@geiconsultants.com]
Sent: Monday, December 16, 2013 9:28 AM
To: Frank D'Agostino
Cc: Reza Tand
Subject: MC26999: Tufts Street - when will data be available? (due last Friday 12/13)

Frank,

We have contractors waiting on some data that was approved for a 3 day TAT due last Friday. We would like this data as soon as possible. Can you provide an update on when this will be available?

Thanks,
Sarah

MC26999R: Chain of Custody
Page 4 of 4

5.1 5

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	MC26999R
Project Location:	GEI Tufts Street Somerville MA	MADEP RTN	None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
MC26999-2R

Matrices: Groundwater/Surface Water ( ) Soil/Sediment (X) Drinking Water ( ) Air ( ) Other ( )

CAM Protocol (check all that apply below):

8260 VOC ( ) CAM IIA	7470/7471 Hg ( ) CAM III B	MassDEP VPH ( ) CAM IV A	8081 Pesticides (X) CAM V B	7196 Hex Cr ( ) CAM VI B	Mass DEP APH ( ) CAM IX A
8270 SVOC ( ) CAM II B	7010 Metals ( ) CAM III C	MassDEP EPH ( ) CAM IV B	8151 Herbicides (X) CAM V C	8330 Explosives ( ) CAM VIII A	TO-15 VOC ( ) CAM IX B
6010 Metals (X) CAM III A	6020 Metals ( ) CAM III D	8082 PCB ( ) CAM V A	9014 Total Cyanide/PAC ( ) CAM VI A	6860 Perchlorate ( ) CAM VIII B	

Affirmative Responses to Questions A Through F are required for "Presumptive Certainty status

A	Were all samples received in a condition consistent with those described on the Chain-of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑	Yes	☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑	Yes	☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑	Yes	☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑	Yes	☐ No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ ☑	Yes Yes	☐ No ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑	Yes	☐ No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	☑	Yes	☐ No [1]
	Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.			
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☐	Yes	☑ No [1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐	Yes	☑ No [1]

[1] ***All Negative responses must be addressed in an attached Environmental Laboratory case narrative.***

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Laboratory Director

Printed Name: Reza Tand Date: 12/30/2013

Internal Sample Tracking Chronicle

GEI Consultants, Inc.

Job No: MC26999R

GEI Tufts Street Somerville MA
Project No: 045163

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC26999-2R	Collected: 10-DEC-13 13:55 By: MLK			Received: 10-DEC-13 By: NT		
145163-34KNOWLTON-COMP						
MC26999-2R	SW846 8015	17-DEC-13 15:26	TB			V8015GRO
MC26999-2R	SW846 8151	17-DEC-13 22:23	CZ	17-DEC-13	MEW	H8151STD
MC26999-2R	SW846 8081	18-DEC-13 12:24	NK	16-DEC-13	BJ	P8081MCP
MC26999-2R	SW846 6010C	18-DEC-13 16:16	SA	18-DEC-13	EM	EPB
MC26999-2R	SW846-8015	18-DEC-13 17:38	KN	16-DEC-13	PA	B8015DRO

New England ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GWX3399-MB	WX70768.D	1	12/17/13	TB	n/a	n/a	GWX3399

The QC reported here applies to the following samples: **Method:** SW846 8015

MC26999-2R

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (VOA)	ND	5.0	1.1	mg/kg	

CAS No.	Surrogate Recoveries		Limits
	2,3,4-Trifluorotoluene	105%	61-116%

Blank Spike Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GWX3399-BSP	WX70769.D	1	12/17/13	TB	n/a	n/a	GWX3399

The QC reported here applies to the following samples: **Method:** SW846 8015

MC26999-2R

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (VOA)	20	20.2	101	66-126

CAS No.	Surrogate Recoveries	BSP	Limits
	2,3,4-Trifluorotoluene	106%	61-116%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC26999-2RMS	WX70771.D	1	12/17/13	TB	n/a	n/a	GWX3399
MC26999-2RMSD	WX70772.D	1	12/17/13	TB	n/a	n/a	GWX3399
MC26999-2R	WX70770.D	1	12/17/13	TB	n/a	n/a	GWX3399

The QC reported here applies to the following samples: **Method:** SW846 8015

MC26999-2R

CAS No.	Compound	MC26999-2R mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (VOA)	ND		26.2	26.6	101	22.2	85	18	41-150/20

CAS No.	Surrogate Recoveries	MS	MSD	MC26999-2R	Limits
	2,3,4-Trifluorotoluene	107%	106%	104%	61-116%

* = Outside of Control Limits.

Volatile Surrogate Recovery Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8015 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
MC26999-2R	WX70770.D	104.0
GWX3399-BSP	WX70769.D	106.0
GWX3399-MB	WX70768.D	105.0
MC26999-2RMS	WX70771.D	107.0
MC26999-2RMSD	WX70772.D	106.0

Surrogate Compounds	Recovery Limits
S1 = 2,3,4-Trifluorotoluene	61-116%

(a) Recovery from GC signal #1

New England ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36240-MB	YZ86895.D	1	12/17/13	CZ	12/17/13	OP36240	GYZ7444

The QC reported here applies to the following samples: **Method:** SW846 8151

MC26999-2R

CAS No.	Compound	Result	RL	MDL	Units	Q
94-75-7	2,4-D	ND	20	1.6	ug/kg	
93-72-1	2,4,5-TP (Silvex)	ND	20	2.0	ug/kg	
93-76-5	2,4,5-T	ND	20	1.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	101%	30-150%
19719-28-9	2,4-DCAA	115%	30-150%

Method Blank Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36236-MB	BE39812.D	1	12/17/13	NK	12/16/13	OP36236	GBE2051

The QC reported here applies to the following samples: **Method:** SW846 8081

MC26999-2R

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	6.6	2.0	ug/kg	
319-84-6	alpha-BHC	ND	6.6	1.6	ug/kg	
319-85-7	beta-BHC	ND	6.6	2.2	ug/kg	
319-86-8	delta-BHC	ND	6.6	1.2	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	6.6	2.0	ug/kg	
12789-03-6	Chlordane	ND	66	13	ug/kg	
60-57-1	Dieldrin	ND	6.6	2.1	ug/kg	
72-54-8	4,4'-DDD	ND	6.6	2.2	ug/kg	
72-55-9	4,4'-DDE	ND	6.6	2.7	ug/kg	
50-29-3	4,4'-DDT	ND	6.6	2.1	ug/kg	
72-20-8	Endrin	ND	6.6	2.6	ug/kg	
1031-07-8	Endosulfan sulfate	ND	6.6	2.2	ug/kg	
959-98-8	Endosulfan-I	ND	6.6	2.6	ug/kg	
33213-65-9	Endosulfan-II	ND	6.6	2.1	ug/kg	
76-44-8	Heptachlor	ND	6.6	1.9	ug/kg	
1024-57-3	Heptachlor epoxide	ND	6.6	2.0	ug/kg	
118-74-1	Hexachlorobenzene	ND	6.6	2.1	ug/kg	
72-43-5	Methoxychlor	ND	6.6	2.6	ug/kg	
53494-70-5	Endrin ketone	ND	6.6	2.4	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	99%	30-150%
877-09-8	Tetrachloro-m-xylene	92%	30-150%
2051-24-3	Decachlorobiphenyl	94%	30-150%
2051-24-3	Decachlorobiphenyl	111%	30-150%

Method Blank Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36226-MB	BI30083.D	1	12/18/13	KN	12/16/13	OP36226	GBI1087

The QC reported here applies to the following samples: **Method:** SW846-8015

MC26999-2R

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (Semi-VOA)	ND	16	4.1	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	84%	40-140%

Blank Spike Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36240-BS	YZ86896.D	1	12/17/13	CZ	12/17/13	OP36240	GYZ7444

The QC reported here applies to the following samples: **Method:** SW846 8151

MC26999-2R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
94-75-7	2,4-D	33.1	32.9	99	40-140
93-72-1	2,4,5-TP (Silvex)	33.1	32.2	97	40-140
93-76-5	2,4,5-T	33.1	48.2	146* [a]	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	104%	30-150%
19719-28-9	2,4-DCAA	120%	30-150%

(a) Outside control limits. Associated samples are non-detect for this compound.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36226-BS	BI30085.D	1	12/18/13	KN	12/16/13	OP36226	GBI1087

The QC reported here applies to the following samples: **Method:** SW846-8015

MC26999-2R

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (Semi-VOA)	162	125	77	45-127

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	79%	40-140%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36236-BS	BE39813.D	1	12/17/13	NK	12/16/13	OP36236	GBE2051
OP36236-BSD	BE39821.D	1	12/18/13	NK	12/16/13	OP36236	GBE2052

The QC reported here applies to the following samples: **Method:** SW846 8081

MC26999-2R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	12.7	12.4	98	13.4	103	8	40-140/30
319-84-6	alpha-BHC	12.7	10.5	83	13.2	101	20	40-140/30
319-85-7	beta-BHC	12.7	11.2	88	14.3	110	24	40-140/30
319-86-8	delta-BHC	12.7	8.9	70	11.3	87	24	40-140/30
58-89-9	gamma-BHC (Lindane)	12.7	10.6	84	13.8	106	19	40-140/30
60-57-1	Dieldrin	12.7	11.7	92	13.8	106	16	40-140/30
72-54-8	4,4'-DDD	12.7	11.0	87	13.8	106	23	40-140/30
72-55-9	4,4'-DDE	12.7	11.0	87	14.0	108	24	40-140/30
50-29-3	4,4'-DDT	12.7	11.2	88	14.1	108	23	40-140/30
72-20-8	Endrin	12.7	13.0	103	14.6	112	12	40-140/30
1031-07-8	Endosulfan sulfate	12.7	10.9	86	13.4	103	21	40-140/30
959-98-8	Endosulfan-I	12.7	11.7	92	13.7	105	16	40-140/30
33213-65-9	Endosulfan-II	12.7	11.6	91	13.8	106	17	40-140/30
76-44-8	Heptachlor	12.7	11.9	94	14.6	112	20	40-140/30
1024-57-3	Heptachlor epoxide	12.7	12.0	95	14.1	108	16	40-140/30
118-74-1	Hexachlorobenzene	12.7	11.3	89	13.2	108	16	40-140/30
72-43-5	Methoxychlor	12.7	11.3	89	14.4	111	24	40-140/30
53494-70-5	Endrin ketone	12.7	11.0	87	13.1	101	17	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	93%	110%	30-150%
877-09-8	Tetrachloro-m-xylene	83%	101%	30-150%
2051-24-3	Decachlorobiphenyl	86%	102%	30-150%
2051-24-3	Decachlorobiphenyl	103%	121%	30-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36240-MS	YZ86897.D	1	12/17/13	CZ	12/17/13	OP36240	GYZ7444
OP36240-MSD	YZ86898.D	1	12/17/13	CZ	12/17/13	OP36240	GYZ7444
MC26999-2R	YZ86899.D	1	12/17/13	CZ	12/17/13	OP36240	GYZ7444

The QC reported here applies to the following samples: **Method:** SW846 8151

MC26999-2R

CAS No.	Compound	MC26999-2R ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
94-75-7	2,4-D	10.6	J	38.6	42.6	83	79.2	88	6	30-150/30
93-72-1	2,4,5-TP (Silvex)	ND		38.6	39.3	102	69.8	90	12	30-150/30
93-76-5	2,4,5-T	ND		38.6	62.3	161* [a]	118	152* [a]	6	30-150/30

CAS No.	Surrogate Recoveries	MS	MSD	MC26999-2R	Limits
19719-28-9	2,4-DCAA	104%	91%	107%	30-150%
		111%	90%	104%	30-150%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36236-MS	BE39823.D	1	12/18/13	NK	12/16/13	OP36236	GBE2052
OP36236-MSD	BE39824.D	1	12/18/13	NK	12/16/13	OP36236	GBE2052
MC26999-2R	BE39825.D	1	12/18/13	NK	12/16/13	OP36236	GBE2052

The QC reported here applies to the following samples: **Method:** SW846 8081

MC26999-2R

CAS No.	Compound	MC26999-2R ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	ND		15.3	14.4	94	15.5	102	7	30-150/30
319-84-6	alpha-BHC	ND		15.3	19.1	125	6.8	45	95* [a]	30-150/30
319-85-7	beta-BHC	ND		15.3	6.7	44	6.8	45	1	30-150/30
319-86-8	delta-BHC	ND		15.3	16.8	110	10.9	72	43* [a]	30-150/30
58-89-9	gamma-BHC (Lindane)	ND		15.3	12.7	83	12.6	83	1	30-150/30
60-57-1	Dieldrin	ND		15.3	54.5	357* [a]	21.2	139	88* [a]	30-150/30
72-54-8	4,4'-DDD	ND		15.3	1030	6741* [a]	16.6	109	194* [a]	30-150/30
72-55-9	4,4'-DDE	ND		15.3	111	726* [a]	17.5	115	146* [a]	30-150/30
50-29-3	4,4'-DDT	ND		15.3	92.0	602* [a]	32.3	212* [a]	96* [a]	30-150/30
72-20-8	Endrin	ND		15.3	97.9	641* [a]	26.4	174* [a]	115* [a]	30-150/30
1031-07-8	Endosulfan sulfate	ND		15.3	64.5	422* [a]	22.2	146	98* [a]	30-150/30
959-98-8	Endosulfan-I	ND		15.3	135	884* [a]	28.7	189* [a]	130* [a]	30-150/30
33213-65-9	Endosulfan-II	ND		15.3	49.1	321* [a]	23.5	155* [a]	71* [a]	30-150/30
76-44-8	Heptachlor	ND		15.3	6.6	43	14.3	94	74* [a]	30-150/30
1024-57-3	Heptachlor epoxide	ND		15.3	14.5	95	16.9	111	15	30-150/30
118-74-1	Hexachlorobenzene	ND		15.3	6.6	43	6.9	45	4	30-150/30
72-43-5	Methoxychlor	ND		15.3	1640	10734* [a]	125	822* [a]	172* [a]	30-150/30
53494-70-5	Endrin ketone	ND		15.3	226	1479* [a]	47.1	310* [a]	131* [a]	30-150/30

CAS No.	Surrogate Recoveries	MS	MSD	MC26999-2R	Limits
877-09-8	Tetrachloro-m-xylene	64%	69%	61%	30-150%
877-09-8	Tetrachloro-m-xylene	35%	46%	39%	30-150%
2051-24-3	Decachlorobiphenyl	124%	99%	148%	30-150%
2051-24-3	Decachlorobiphenyl	125%	81%	80%	30-150%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36226-MS	BI30091.D	1	12/18/13	KN	12/16/13	OP36226	GBI1087
OP36226-MSD	BI30093.D	1	12/18/13	KN	12/16/13	OP36226	GBI1087
MC27084-1	BI30095.D	1	12/18/13	KN	12/16/13	OP36226	GBI1087

The QC reported here applies to the following samples: **Method:** SW846-8015

MC26999-2R

CAS No.	Compound	MC27084-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (Semi-VOA)	225		185	530	165* [a]	484	144	9	30-154/50

CAS No.	Surrogate Recoveries	MS	MSD	MC27084-1	Limits
84-15-1	o-Terphenyl	86%	75%	63%	40-140%

(a) Outside control limits due to possible matrix interference.

---

* = Outside of Control Limits.

Semivolatile Surrogate Recovery Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8151 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
MC26999-2R	YZ86899.D	107.0	104.0
OP36240-BS	YZ86896.D	104.0	120.0
OP36240-MB	YZ86895.D	101.0	115.0
OP36240-MS	YZ86897.D	104.0	111.0
OP36240-MSD	YZ86898.D	91.0	90.0

Surrogate Compounds	Recovery Limits
S1 = 2,4-DCAA	30-150%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Semivolatile Surrogate Recovery Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8081 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
MC26999-2R	BE39825.D	61.0	39.0	148.0	80.0
OP36236-BS	BE39813.D	93.0	83.0	86.0	103.0
OP36236-BSD	BE39821.D	110.0	101.0	102.0	121.0
OP36236-MB	BE39812.D	99.0	92.0	94.0	111.0
OP36236-MS	BE39823.D	64.0	35.0	124.0	125.0
OP36236-MSD	BE39824.D	69.0	46.0	99.0	81.0

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	30-150%
S2 = Decachlorobiphenyl	30-150%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Semivolatile Surrogate Recovery Summary

Job Number: MC26999R
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846-8015	**Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]
MC26999-2R	BI30097.D	76.0
OP36226-BS	BI30085.D	79.0
OP36226-MB	BI30083.D	84.0
OP36226-MS	BI30091.D	86.0
OP36226-MSD	BI30093.D	75.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	40-140%

(a) Recovery from GC signal #1

New England ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 12/18/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.20	.0061	.04		
Antimony	0.0060	.0011	.0019		
Arsenic	0.010	.0022	.0029		
Barium	0.50	.00019	.00081		
Beryllium	0.0040	.00008	.00025		
Boron	0.10	.00081	.0014		
Cadmium	0.0040	.00022	.0005		
Calcium	5.0	.0085	.038		
Chromium	0.010	.00074	.0014		
Cobalt	0.050	.00028	.0004		
Copper	0.025	.00086	.007		
Gold	0.050	.0018	.005		
Iron	0.10	.0044	.02		
Lead	0.010	.0016	.0017	-0.00010	<0.010
Magnesium	5.0	.043	.059		
Manganese	0.015	.00017	.00081		
Molybdenum	0.10	.0004	.00077		
Nickel	0.040	.00045	.00057		
Palladium	0.050	.002	.0076		
Platinum	0.050	.0087	.014		
Potassium	5.0	.024	.16		
Selenium	0.025	.0014	.0048		
Silicon	0.10	.0021	.045		
Silver	0.0050	.00047	.001		
Sodium	5.0	.042	.06		
Sulfur	0.050	.0029	.008		
Strontium	0.010	.0001	.00026		
Thallium	0.0050	.0017	.0019		
Tin	0.10	.0015	.0014		
Titanium	0.050	.00048	.0018		
Tungsten	0.10	.0093	.016		
Vanadium	0.010	.0009	.0028		
Zinc	0.10	.00091	.0005		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:

Metal			
Zirconium	0.050	.00076	.0022

Associated samples MP22284: MC26999-2R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 12/18/13

Metal	MC27177-1 Original MS		Spikelot MPICP	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Gold					
Iron					
Lead	0.0018	0.91	1.0	90.8	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel					
Palladium					
Platinum					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Sulfur					
Strontium					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:

Metal

Zirconium

Associated samples MP22284: MC26999-2R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 12/18/13

Metal	MC27177-1 Original	MSD	Spikelot MPICP	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Gold						
Iron						
Lead	0.0018	0.92	1.0	91.8	1.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel						
Palladium						
Platinum						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Sulfur						
Strontium						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:

Metal
Zirconium

Associated samples MP22284: MC26999-2R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

8.1

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SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 12/18/13 12/18/13

Metal	BSP Result	Spikelot MPICP	% Rec	QC Limits	BSD Result	Spikelot MPICP	% Rec	BSD RPD	QC Limit
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Gold									
Iron									
Lead	0.92	1.0	92.0	80-120	0.92	1.0	92.0	0.0	20
Magnesium									
Manganese									
Molybdenum									
Nickel									
Palladium									
Platinum									
Potassium									
Selenium									
Silicon									
Silver									
Sodium									
Sulfur									
Strontium									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									
Zinc									

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:

Metal
Zirconium

Associated samples MP22284: MC26999-2R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/18/13

Metal	MC27177-1 Original SDL 1:5	%DIF	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Gold			
Iron			
Lead	1.80	0.00	100.0(a) 0-10
Magnesium			
Manganese			
Molybdenum			
Nickel			
Palladium			
Platinum			
Potassium			
Selenium			
Silicon			
Silver			
Sodium			
Sulfur			
Strontium			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			
Zinc			

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SERIAL DILUTION RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal
Zirconium

Associated samples MP22284: MC26999-2R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

New England ACCUTEST LABORATORIES

01/08/14

Technical Report for

GEI Consultants, Inc.

GEI Tufts Street Somerville MA

045163

Accutest Job Number: MC27461

Sampling Date: 12/31/13

Report to:

GEI Consultants, Inc.

jroman@geiconsultants.com

ATTN: Joseph Roman

Total number of pages in report: 74

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Reza Tand
Lab Director

Client Service contact: Frank DAgostino 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) DoD ELAP (L-A-B L2235)

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Test results relate only to samples analyzed.

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SERIAL DILUTION RESULTS SUMMARY

Login Number: MC26999R
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22284
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal
Zirconium

Associated samples MP22284: MC26999-2R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

8.1.4

ACCUTEST LABORATORIES
MC26999R

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Sample Summary

GEI Consultants, Inc.

Job No: MC27461

GEI Tufts Street Somerville MA
Project No: 045163

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
MC27461-1	12/31/13	10:55	MLK	12/31/13	SO	Soil	045163-DISP-A
MC27461-2	12/31/13	11:00	MLK	12/31/13	SO	Soil	045163-DISP-COMP1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GEI Consultants, Inc. **Job No** MC27461

Site: GEI Tufts Street Somerville MA **Report Date** 1/8/2014 2:51:42 PM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 12/31/2013 and were received at Accutest on 12/31/2013 properly preserved, at 1.7 Deg. C and intact. These Samples received an Accutest job number of MC27461. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260C

Matrix: SO **Batch ID:** MSM2190

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27454-8MS, MC27454-8MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for 2,2-Dichloropropane are outside control limits.
- MC27454-8MS for 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dichlorobenzene, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Acetone, Bromobenzene, Chlorobenzene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, n-Butylbenzene, n-Propylbenzene, Naphthalene, o-Chlorotoluene, o-Xylene, p-Chlorotoluene, p-Isopropyltoluene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Xylene (total) are outside control limits due to possible matrix interference. Refer to Blank Spike.
- MC27454-8MSD for 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, Acetone, Benzene, Bromobenzene, Bromodichloromethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Di-Isopropyl ether, Dibromochloromethane, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, n-Butylbenzene, n-Propylbenzene, Naphthalene, o-Chlorotoluene, o-Xylene, p-Chlorotoluene, p-Isopropyltoluene, sec-Butylbenzene, Styrene, tert-Butylbenzene, Tetrachloroethene, Toluene, Trichloroethene, Xylene (total) are outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MC27454-8MSD for 1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,1-Dichloropropene, 1,2,3-Trichlorobenzene, 1,2,3-Trichloropropane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromoethane, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3,5-Trimethylbenzene, 1,3-Dichlorobenzene, 1,3-Dichloropropane, 1,4-Dichlorobenzene, 2,2-Dichloropropane, 2-Butanone (MEK), 2-Hexanone, 4-Methyl-2-pentanone (MIBK), Acetone, Benzene, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Di-Isopropyl ether, Dibromochloromethane, Ethyl Ether, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, m,p-Xylene, Methyl Tert Butyl Ether, Methylene bromide, Methylene chloride, n-Butylbenzene, n-Propylbenzene, Naphthalene, o-Chlorotoluene, o-Xylene, p-Chlorotoluene, p-Isopropyltoluene, sec-Butylbenzene, Styrene, tert-Amyl Methyl Ether, tert-Butyl Ethyl Ether, tert-Butylbenzene, Tetrachloroethene, Tetrahydrofuran, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Xylene (total) are outside control limits. High RPD due to possible matrix interference and/or sample non-homogeneity.
- RPD(s) for MSM2190-BSD for Dichlorodifluoromethane: Outside control limits. Blank Spike meets program technical requirements.
- MSM2190-BSD for Dichlorodifluoromethane: Outside control limits. Blank Spike meets program technical requirements.
- RPD(s) for MSM2190-BSD for 2-Butanone (MEK), Acetone: Outside control limits. Individual spike recoveries within acceptance limits.
- MSM2190-BS/BSD for 2,2-Dichloropropane: Outside control limits. Associated samples are non-detect for this compound.
- The response factor (RF) for the 2-Butanone and Acetone low points (0.043 and 0.048) and average points (0.053 and 0.050) in the initial calibration MSM2178-ICC2178 are less than the required RF of 0.1 as noted in Table 4 of SW846 8260C.
- Continuing calibration check standard MSM2190-CC2178 for chloromethane, bromomethane, chloroethane, 2-butanone exceed 20% Difference. This check standard met RCP criteria.

Volatiles by GCMS By Method SW846 8260C

Matrix: SO	Batch ID: MSM2190

- Continuing calibration check standard MSM2190-CC2178 for 2,2-dichloropropane exceed 40% Difference (response biased high). Associated samples are non-detect for this compound.

Extractables by GCMS By Method SW846 8270D

Matrix: SO	Batch ID: OP36403

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27454-1MS, MC27454-1MSD were used as the QC samples indicated.
- OP36403-BS for 2,4-Dinitrophenol, Benzoic acid are outside control limits. Blank Spike meets program technical requirements.
- OP36403-MS/MSD for 2,4-Dinitrophenol, Benzoic acid are outside control limits due to possible matrix interference. Refer to Blank Spike.
- Continuing calibration check standard MSW755-CC729 for Benzoic acid exceed 40% Difference. Benzoic acid is considered a difficult analyte.
- Initial calibration verification MSW729-ICV729 for Aniline, bis(2-chloroisopropyl)ether, Pentachloronitrobenzene exceed 30% Difference.
- Continuing calibration check standard MSW755-CC729 for Hexachlorocyclopentadiene, 2,4-Dinitrophenol exceed 20% Difference.

Extractables by GC By Method MADEP EPH REV 1.1

Matrix: SO	Batch ID: OP36411

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27461-2MS, MC27461-2MSD were used as the QC samples indicated.
- OP36411-MS for C11-C22 Aromatics (Unadj.) are outside control limits due to possible matrix interference.
- Only carbon ranges requested.

Extractables by GC By Method SW846 8082

Matrix: SO	Batch ID: OP36433

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27461-2MS, MC27461-2MSD, OP36433-MSMSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: SO	Batch ID: MP22338

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27454-5MS, MC27454-5MSD, MC27454-5SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cadmium, Selenium are outside control limits for sample MP22338-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP22338-SD1 for Barium, Chromium, Lead, Vanadium: Serial dilution indicates possible matrix interference.
- Only selected metals requested.

Metals By Method SW846 7471B

Matrix: SO	Batch ID: MP22346

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27454-2MS, MC27454-2MSD were used as the QC samples for metals.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO	Batch ID: GN45630

- Sample(s) MC27461-2DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method EPA 120.1M

Matrix: SO	Batch ID: GN45629

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27461-2DUP were used as the QC samples for Specific Conductivity.

Wet Chemistry By Method SM21 2540 B MOD.

Matrix: SO	Batch ID: GN45635

- Sample(s) MC27461-2DUP were used as the QC samples for Solids, Percent.

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO	Batch ID: GP17102

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27461-2DUP, MC27461-2MS were used as the QC samples for Chromium, Hexavalent.

Wet Chemistry By Method SW846 9045D

Matrix: SO	Batch ID: GN45628

- Sample(s) MC27461-2DUP were used as the QC samples for pH.

Wet Chemistry By Method SW846 CHAP7

Matrix: SO	Batch ID: GP17092

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27461-2DUP, MC27461-2MS were used as the QC samples for Cyanide Reactivity.

Matrix: SO	Batch ID: GP17093

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC27461-2DUP, MC27461-2MS were used as the QC samples for Sulfide Reactivity.

Accutest may not have met all requested limits due to methodology limitations, sample matrix, dilutions, or percents solids.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(MC27461).

Summary of Hits

Job Number: MC27461
Account: GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA
Collected: 12/31/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
MC27461-1	**045163-DISP-A**					
Benzene		0.59	0.37	0.18	ug/kg	SW846 8260C
MC27461-2	**045163-DISP-COMP1**					
Acenaphthene		559 J	610	81	ug/kg	SW846 8270D
Acenaphthylene		67.4 J	610	61	ug/kg	SW846 8270D
Anthracene		1420	610	73	ug/kg	SW846 8270D
Benzo(a)anthracene		6290	610	78	ug/kg	SW846 8270D
Benzo(a)pyrene		5800	610	65	ug/kg	SW846 8270D
Benzo(b)fluoranthene		3610	610	76	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		3250	610	61	ug/kg	SW846 8270D
Benzo(k)fluoranthene		4390	610	92	ug/kg	SW846 8270D
Chrysene		6560	610	75	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		914	610	72	ug/kg	SW846 8270D
Diethyl phthalate		331 J	1500	76	ug/kg	SW846 8270D
Fluoranthene		9510	610	83	ug/kg	SW846 8270D
Fluorene		273 J	610	81	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		2570	610	67	ug/kg	SW846 8270D
Phenanthrene		6610	610	82	ug/kg	SW846 8270D
Pyrene		15600	610	71	ug/kg	SW846 8270D
C11-C22 Aromatics (Unadj.)		57700	21000	21000	ug/kg	MADEP EPH REV 1.1
C11-C22 Aromatics		42300	21000	21000	ug/kg	MADEP EPH REV 1.1
Arsenic		10.1	1.0		mg/kg	SW846 6010C
Barium		73.9	5.1		mg/kg	SW846 6010C
Chromium		25.0	1.0		mg/kg	SW846 6010C
Lead		70.6	1.0		mg/kg	SW846 6010C
Mercury		0.23	0.039		mg/kg	SW846 7471B
Vanadium		39.8	1.0		mg/kg	SW846 6010C
Chromium, Hexavalent		0.62	0.48		mg/kg	SW846 3060A/7196A
Ignitability (Flashpoint)		> 230			Deg. F	SW846 1020
Redox Potential Vs H2		436			mv	ASTM D1498-76M
Specific Conductivity		2.3	0.50		umhos/cm	EPA 120.1M
pH		7.4			su	SW846 9045D

New England ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	045163-DISP-A		
Lab Sample ID:	MC27461-1	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
Method:	SW846 8260C	**Percent Solids:**	82.6
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M62636.D	1	01/03/14	AMY	n/a	n/a	MSM2190
Run #2							

	Initial Weight	Final Volume
Run #1	8.10 g	5.0 ml
Run #2		

VOA MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	7.5	2.9	ug/kg	
71-43-2	Benzene	0.59	0.37	0.18	ug/kg	
108-86-1	Bromobenzene	ND	3.7	0.21	ug/kg	
74-97-5	Bromochloromethane	ND	3.7	0.43	ug/kg	
75-27-4	Bromodichloromethane	ND	1.5	0.27	ug/kg	
75-25-2	Bromoform	ND	1.5	0.22	ug/kg	
74-83-9	Bromomethane	ND	1.5	0.73	ug/kg	
78-93-3	2-Butanone (MEK)	ND	3.7	2.3	ug/kg	
104-51-8	n-Butylbenzene	ND	3.7	0.13	ug/kg	
135-98-8	sec-Butylbenzene	ND	3.7	0.12	ug/kg	
98-06-6	tert-Butylbenzene	ND	3.7	0.27	ug/kg	
75-15-0	Carbon disulfide	ND	3.7	0.11	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.5	0.87	ug/kg	
108-90-7	Chlorobenzene	ND	1.5	0.20	ug/kg	
75-00-3	Chloroethane	ND	3.7	0.45	ug/kg	
67-66-3	Chloroform	ND	1.5	0.22	ug/kg	
74-87-3	Chloromethane	ND	3.7	0.91	ug/kg	
95-49-8	o-Chlorotoluene	ND	3.7	0.31	ug/kg	
106-43-4	p-Chlorotoluene	ND	3.7	0.33	ug/kg	
108-20-3	Di-Isopropyl ether	ND	1.5	0.14	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.7	1.5	ug/kg	
124-48-1	Dibromochloromethane	ND	1.5	0.32	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.5	0.42	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.5	0.16	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.5	0.17	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.5	0.15	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	1.5	0.83	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.5	0.25	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.5	0.41	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.5	0.39	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.5	0.38	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.33	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-DISP-A		
Lab Sample ID:	MC27461-1	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
Method:	SW846 8260C	**Percent Solids:**	82.6
Project:	GEI Tufts Street Somerville MA		

VOA MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.5	0.32	ug/kg	
142-28-9	1,3-Dichloropropane	ND	3.7	0.33	ug/kg	
594-20-7	2,2-Dichloropropane	ND	3.7	0.49	ug/kg	
563-58-6	1,1-Dichloropropene	ND	3.7	0.17	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.22	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.22	ug/kg	
123-91-1	1,4-Dioxane	ND	19	16	ug/kg	
60-29-7	Ethyl Ether	ND	3.7	0.55	ug/kg	
100-41-4	Ethylbenzene	ND	1.5	0.13	ug/kg	
87-68-3	Hexachlorobutadiene	ND	3.7	0.42	ug/kg	
591-78-6	2-Hexanone	ND	3.7	1.8	ug/kg	
98-82-8	Isopropylbenzene	ND	3.7	0.21	ug/kg	
99-87-6	p-Isopropyltoluene	ND	3.7	0.12	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.5	0.30	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	3.7	1.4	ug/kg	
74-95-3	Methylene bromide	ND	3.7	0.26	ug/kg	
75-09-2	Methylene chloride	ND	1.5	1.2	ug/kg	
91-20-3	Naphthalene	ND	3.7	0.59	ug/kg	
103-65-1	n-Propylbenzene	ND	3.7	0.18	ug/kg	
100-42-5	Styrene	ND	3.7	0.15	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	3.7	0.52	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	1.5	0.16	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	3.7	0.29	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.5	0.22	ug/kg	
127-18-4	Tetrachloroethene	ND	1.5	0.33	ug/kg	
109-99-9	Tetrahydrofuran	ND	7.5	0.93	ug/kg	
108-88-3	Toluene	ND	3.7	0.18	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	3.7	0.32	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	3.7	0.27	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.5	0.13	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.26	ug/kg	
79-01-6	Trichloroethene	ND	1.5	0.35	ug/kg	
75-69-4	Trichlorofluoromethane	ND	1.5	0.78	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	3.7	0.29	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	3.7	0.15	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	3.7	0.097	ug/kg	
75-01-4	Vinyl chloride	ND	1.5	0.43	ug/kg	
	m,p-Xylene	ND	1.5	0.21	ug/kg	
95-47-6	o-Xylene	ND	1.5	0.15	ug/kg	
1330-20-7	Xylene (total)	ND	1.5	0.15	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-DISP-A		
Lab Sample ID:	MC27461-1	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
Method:	SW846 8260C	**Percent Solids:**	82.6
Project:	GEI Tufts Street Somerville MA		

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	121%		70-130%
2037-26-5	Toluene-D8	122%		70-130%
460-00-4	4-Bromofluorobenzene	108%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: 045163-DISP-COMP1
Lab Sample ID: MC27461-2
Matrix: SO - Soil
Method: SW846 8270D SW846 3546
Project: GEI Tufts Street Somerville MA

Date Sampled: 12/31/13
Date Received: 12/31/13
Percent Solids: 81.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W17044.D	5	01/07/14	KR	12/31/13	OP36403	MSW755
Run #2							

	Initial Weight	Final Volume
Run #1	20.2 g	1.0 ml
Run #2		

ABN MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	3000	380	ug/kg	
95-57-8	2-Chlorophenol	ND	1500	68	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	3000	77	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	3000	87	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	3000	490	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	6100	760	ug/kg	
95-48-7	2-Methylphenol	ND	3000	120	ug/kg	
	3&4-Methylphenol	ND	3000	150	ug/kg	
88-75-5	2-Nitrophenol	ND	3000	81	ug/kg	
100-02-7	4-Nitrophenol	ND	6100	570	ug/kg	
87-86-5	Pentachlorophenol	ND	3000	210	ug/kg	
108-95-2	Phenol	ND	1500	86	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	3000	76	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	3000	75	ug/kg	
83-32-9	Acenaphthene	559	610	81	ug/kg	J
208-96-8	Acenaphthylene	67.4	610	61	ug/kg	J
98-86-2	Acetophenone	ND	3000	67	ug/kg	
62-53-3	Aniline	ND	3000	150	ug/kg	
120-12-7	Anthracene	1420	610	73	ug/kg	
56-55-3	Benzo(a)anthracene	6290	610	78	ug/kg	
50-32-8	Benzo(a)pyrene	5800	610	65	ug/kg	
205-99-2	Benzo(b)fluoranthene	3610	610	76	ug/kg	
191-24-2	Benzo(g,h,i)perylene	3250	610	61	ug/kg	
207-08-9	Benzo(k)fluoranthene	4390	610	92	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	1500	77	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	1500	62	ug/kg	
91-58-7	2-Chloronaphthalene	ND	1500	82	ug/kg	
106-47-8	4-Chloroaniline	ND	3000	76	ug/kg	
218-01-9	Chrysene	6560	610	75	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	1500	71	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	1500	92	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	1500	110	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-DISP-COMP1		
Lab Sample ID:	MC27461-2	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
Method:	SW846 8270D SW846 3546	**Percent Solids:**	81.7
Project:	GEI Tufts Street Somerville MA		

ABN MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	1,2-Dichlorobenzene	ND	1500	78	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	1500	68	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1500	87	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1500	81	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	3000	200	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	3000	76	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	1500	150	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	914	610	72	ug/kg	
132-64-9	Dibenzofuran	ND	610	84	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	1500	160	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	1500	47	ug/kg	
84-66-2	Diethyl phthalate	331	1500	76	ug/kg	J
131-11-3	Dimethyl phthalate	ND	1500	88	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1500	56	ug/kg	
206-44-0	Fluoranthene	9510	610	83	ug/kg	
86-73-7	Fluorene	273	610	81	ug/kg	J
118-74-1	Hexachlorobenzene	ND	1500	95	ug/kg	
87-68-3	Hexachlorobutadiene	ND	1500	88	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	3000	760	ug/kg	
67-72-1	Hexachloroethane	ND	1500	73	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	2570	610	67	ug/kg	
78-59-1	Isophorone	ND	1500	70	ug/kg	
91-57-6	2-Methylnaphthalene	ND	610	77	ug/kg	
91-20-3	Naphthalene	ND	610	97	ug/kg	
98-95-3	Nitrobenzene	ND	1500	82	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	1500	87	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	1500	92	ug/kg	
85-01-8	Phenanthrene	6610	610	82	ug/kg	
129-00-0	Pyrene	15600	610	71	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	1500	84	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	59%		30-130%
4165-62-2	Phenol-d5	60%		30-130%
118-79-6	2,4,6-Tribromophenol	56%		30-130%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	89%		30-130%
1718-51-0	Terphenyl-d14	86%		30-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-DISP-COMP1		
Lab Sample ID:	MC27461-2	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
Method:	SW846 8082 SW846 3546	**Percent Solids:**	81.7
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK33663.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108
Run #2							

	Initial Weight	Final Volume
Run #1	15.8 g	10.0 ml
Run #2		

MA Polychlorinated Biphenyls MCP List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	18	ug/kg	
11104-28-2	Aroclor 1221	ND	39	23	ug/kg	
11141-16-5	Aroclor 1232	ND	39	18	ug/kg	
53469-21-9	Aroclor 1242	ND	39	19	ug/kg	
12672-29-6	Aroclor 1248	ND	39	17	ug/kg	
11097-69-1	Aroclor 1254	ND	39	28	ug/kg	
11096-82-5	Aroclor 1260	ND	39	20	ug/kg	
37324-23-5	Aroclor 1262	ND	39	33	ug/kg	
11100-14-4	Aroclor 1268	ND	39	17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	93%		30-150%
877-09-8	Tetrachloro-m-xylene	95%		30-150%
2051-24-3	Decachlorobiphenyl	106%		30-150%
2051-24-3	Decachlorobiphenyl	106%		30-150%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-DISP-COMP1		
Lab Sample ID:	MC27461-2	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
Method:	MADEP EPH REV 1.1 SW846 3546	**Percent Solids:**	81.7
Project:	GEI Tufts Street Somerville MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DE2339.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287
Run #2							

	Initial Weight	Final Volume
Run #1	11.4 g	2.0 ml
Run #2		

Extractable TPHC Ranges

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	57700	21000	21000	ug/kg	
	C9-C18 Aliphatics	ND	11000	11000	ug/kg	
	C19-C36 Aliphatics	ND	11000	11000	ug/kg	
	C11-C22 Aromatics	42300	21000	21000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	103%		40-140%
321-60-8	2-Fluorobiphenyl	90%		40-140%
580-13-2	2-Bromonaphthalene	75%		40-140%
3386-33-2	1-Chlorooctadecane	82%		40-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	045163-DISP-COMP1		
Lab Sample ID:	MC27461-2	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
		Percent Solids:	81.7
Project:	GEI Tufts Street Somerville MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	10.1	1.0	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Barium	73.9	5.1	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Cadmium	< 0.41	0.41	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Chromium	25.0	1.0	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Lead	70.6	1.0	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Mercury	0.23	0.039	mg/kg	1	01/06/14	01/06/14	SA	SW846 7471B [2]	SW846 7471B [4]
Selenium	< 1.0	1.0	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Silver	< 0.51	0.51	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]
Vanadium	39.8	1.0	mg/kg	1	01/02/14	01/02/14	PY	SW846 6010C [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA16628
(2) Instrument QC Batch: MA16629
(3) Prep QC Batch: MP22338
(4) Prep QC Batch: MP22346

RL = Reporting Limit

Report of Analysis

Client Sample ID:	045163-DISP-COMP1		
Lab Sample ID:	MC27461-2	**Date Sampled:**	12/31/13
Matrix:	SO - Soil	**Date Received:**	12/31/13
		Percent Solids:	81.7
Project:	GEI Tufts Street Somerville MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.62	0.48	mg/kg	1	01/06/14 13:55	MC	SW846 3060A/7196A
Cyanide Reactivity	< 1.8	1.8	mg/kg	1	12/31/13 15:05	BF	SW846 CHAP7
Ignitability (Flashpoint)	> 230		Deg. F	1	12/31/13	BF	SW846 1020
Redox Potential Vs H2	436		mv	1	12/31/13	CF	ASTM D1498-76M
Solids, Percent	81.7		%	1	01/02/14	HS	SM21 2540 B MOD.
Specific Conductivity	2.3	0.50	umhos/cm	1	12/31/13	MA	EPA 120.1M
Sulfide Reactivity	< 61	61	mg/kg	1	12/31/13	BF	SW846 CHAP7
pH	7.4		su	1	12/31/13	MA	SW846 9045D

RL = Reporting Limit

New England ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle

Chain-of-Custody Record

Laboratory:

Laboratory Job # (Lab use only) MC27461

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: Tufts Street

Project Location: Sommerville, MA

Project Number: 045163

Project Manager: J. Roman
(o) 781-721-4136 (c) 619-977-2951

Send Report to: Sarah Moseley

Send EDD to: labdata@geiconsultants.com

Preservative

	VOCs	% Solids	EPH (fractions only)	RCRA 8 Metals, Hex Chrom, Vanadium	SVOCs / PCBs	Conductivity/ Ignitibility	pH / ORP	Sulfide and Cyanide Reactivity
MEOH								

Analysis

Sample Handling

Samples Field Filtered: YES NO NA

Sampled Shipped With Ice: YES NO

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? YES NO NA

Are Drinking Water Samples Submitted? YES NO NA

If Yes, Have Drinking Water Sampling Requirements Been Met? YES NO NA

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	VOCs	% Solids	EPH (fractions only)	RCRA 8 Metals, Hex Chrom, Vanadium	SVOCs / PCBs	Conductivity/ Ignitibility	pH / ORP	Sulfide and Cyanide Reactivity	Sample Specific Remarks
1	045163-DISP-A	12/31/13	1055	SO	~~4~~ 5	MLK	X	X							
2	045163-DISP-COMP1	12/31/13	1100	SO	4	MLK			X	X	X	X	X	X	
															15A
															10K3

MCP Level Needed: GEI requires that, within the specified method, the most stringent Method 1 MCP standard be met for all analytes whenever possible.

	Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1		12-31-13	1320	1.
2	Relinquished by: (signature)	Date:	Time:	Received by: (signature) 2.
3	Relinquished by: (signature)	Date:	Time:	Received by: (signature) 3.
4	Relinquished by: (signature)	Date:	Time:	Received by: (signature) 4.

Turnaround Time (Business days):

Normal ____ Other ____

10-Day ____ 7-Day ____

5-Day ____ 3-Day __X__

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be achieved.

Additional Requirements/Comments/Remarks:

Call project manager if metal(s) exceed 20X haz waste rule.

pH and ORP have 24 hour hold times.

RUSH!

1.7°C

12/31/2013

T:\FIELD FORMS\Chain of Custody_MCP 2013

5.1 5

MC27461: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: MC27461 **Client:** GEI **Immediate Client Services Action Required:** No

Date / Time Received: 12/31/2013 **Delivery Method:** **Client Service Action Required at Login:** No

Project: TUFTS **No. Coolers:** 1 **Airbill #'s:**

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

MC27461: Chain of Custody
Page 2 of 2

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name:	Accutest Laboratories of New England	Project #:	MC27461
Project Location:	GEI Tufts Street Somerville MA	MADEP RTN	None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
MC27461-1,MC27461-2

Matrices: Groundwater/Surface Water ( ) Soil/Sediment (X) Drinking Water ( ) Air ( ) Other ( )

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg (X) CAM III B	MassDEP VPH ( ) CAM IV A	8081 Pesticides ( ) CAM V B	7196 Hex Cr (X) CAM VI B	Mass DEP APH ( ) CAM IX A
8270 SVOC (X) CAM II B	7010 Metals ( ) CAM III C	MassDEP EPH (X) CAM IV B	8151 Herbicides ( ) CAM V C	8330 Explosives ( ) CAM VIII A	TO-15 VOC ( ) CAM IX B
6010 Metals (X) CAM III A	6020 Metals ( ) CAM III D	8082 PCB (X) CAM V A	9014 Total Cyanide/PAC ( ) CAM VI A	6860 Perchlorate ( ) CAM VIII B	

Affirmative Responses to Questions A Through F are required for "Presumptive Certainty status

A	Were all samples received in a condition consistent with those described on the Chain-of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No	
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes	☐ No	
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No	
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes	☐ No	
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ Yes ☑ Yes	☐ No ☐ No	
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑ Yes	☐ No	

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	☐ Yes	☑ No [1]	
	Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.			
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No [1]	
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No [1]	

[1] ***All Negative responses must be addressed in an attached Environmental Laboratory case narrative.***

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Position: Laboratory Director

Printed Name: Reza Tand Date: 01/08/2014

Internal Sample Tracking Chronicle

GEI Consultants, Inc.

Job No: MC27461

GEI Tufts Street Somerville MA
Project No: 045163

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
MC27461-1 Collected: 31-DEC-13 10:55 By: MLK		Received: 31-DEC-13 By:				
045163-DISP-A						
MC27461-1	SM21 2540 B MOD.	02-JAN-14	HS			%SOL
MC27461-1	SW846 8260C	03-JAN-14 16:16	AMY			V8260MCP
MC27461-2 Collected: 31-DEC-13 11:00 By: MLK		Received: 31-DEC-13 By:				
045163-DISP-COMP1						
MC27461-2	EPA 120.1M	31-DEC-13	MA			SCON
MC27461-2	SW846 1020	31-DEC-13	BF			IGN
MC27461-2	SW846 9045D	31-DEC-13	MA			PH
MC27461-2	ASTM D1498-76M	31-DEC-13	CF			EH
MC27461-2	SW846 CHAP7	31-DEC-13	BF	31-DEC-13	BF	SREAC
MC27461-2	SW846 CHAP7	31-DEC-13 15:05	BF	31-DEC-13	BF	CREAC
MC27461-2	SM21 2540 B MOD.	02-JAN-14	HS			%SOL
MC27461-2	SW846 6010C	02-JAN-14 22:04	PY	02-JAN-14	MA	AG,AS,BA,CD,CR,PB,SE,V
MC27461-2	MADEP EPH REV 1.1	02-JAN-14 22:10	ZB	31-DEC-13	FC	BMAEPHR
MC27461-2	SW846 8082	06-JAN-14 10:40	NK	03-JAN-14	MEW	P8082MCP
MC27461-2	SW846 7471B	06-JAN-14 12:03	SA	06-JAN-14	EM	HG
MC27461-2	SW846 3060A/7196A	06-JAN-14 13:55	MC	06-JAN-14	MC	XCRA
MC27461-2	SW846 8270D	07-JAN-14 16:27	KR	31-DEC-13	FC	AB8270MCP

ACCUTEST LABORATORIES
MC27461

New England ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2190-MB	M62632.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	3.9	ug/kg	
71-43-2	Benzene	ND	0.50	0.25	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.27	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.58	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.36	ug/kg	
75-25-2	Bromoform	ND	2.0	0.29	ug/kg	
74-83-9	Bromomethane	ND	2.0	0.97	ug/kg	
78-93-3	2-Butanone (MEK)	ND	5.0	3.1	ug/kg	
104-51-8	n-Butylbenzene	ND	5.0	0.17	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.0	0.16	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.0	0.36	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	0.15	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	1.2	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.27	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.60	ug/kg	
67-66-3	Chloroform	ND	2.0	0.29	ug/kg	
74-87-3	Chloromethane	ND	5.0	1.2	ug/kg	
95-49-8	o-Chlorotoluene	ND	5.0	0.41	ug/kg	
106-43-4	p-Chlorotoluene	ND	5.0	0.44	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	0.19	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.43	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.0	0.57	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.21	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.22	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.20	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	2.0	1.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.0	0.33	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.0	0.54	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.0	0.52	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.0	0.51	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.0	0.45	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.42	ug/kg	
142-28-9	1,3-Dichloropropane	ND	5.0	0.45	ug/kg	
594-20-7	2,2-Dichloropropane	ND	5.0	0.66	ug/kg	
563-58-6	1,1-Dichloropropene	ND	5.0	0.23	ug/kg	

Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2190-MB	M62632.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.29	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.29	ug/kg	
123-91-1	1,4-Dioxane	ND	25	21	ug/kg	
60-29-7	Ethyl Ether	ND	5.0	0.74	ug/kg	
100-41-4	Ethylbenzene	ND	2.0	0.18	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.57	ug/kg	
591-78-6	2-Hexanone	ND	5.0	2.4	ug/kg	
98-82-8	Isopropylbenzene	ND	5.0	0.28	ug/kg	
99-87-6	p-Isopropyltoluene	ND	5.0	0.16	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	0.40	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.8	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.35	ug/kg	
75-09-2	Methylene chloride	ND	2.0	1.5	ug/kg	
91-20-3	Naphthalene	ND	5.0	0.79	ug/kg	
103-65-1	n-Propylbenzene	ND	5.0	0.24	ug/kg	
100-42-5	Styrene	ND	5.0	0.21	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	5.0	0.70	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	0.21	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.39	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.29	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.44	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	1.3	ug/kg	
108-88-3	Toluene	ND	5.0	0.24	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.43	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.36	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.18	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.35	ug/kg	
79-01-6	Trichloroethene	ND	2.0	0.47	ug/kg	
75-69-4	Trichlorofluoromethane	ND	2.0	1.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.39	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.21	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.13	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.57	ug/kg	
	m,p-Xylene	ND	2.0	0.29	ug/kg	
95-47-6	o-Xylene	ND	2.0	0.20	ug/kg	
1330-20-7	Xylene (total)	ND	2.0	0.20	ug/kg	

Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2190-MB	M62632.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	116%	70-130%
2037-26-5	Toluene-D8	121%	70-130%
460-00-4	4-Bromofluorobenzene	110%	70-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2190-BS	M62629.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MSM2190-BSD	M62630.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	35.9	72	63.9	128	56* [a]	70-130/25
71-43-2	Benzene	50	48.5	97	49.7	99	2	70-130/25
108-86-1	Bromobenzene	50	49.3	99	50.6	101	3	70-130/25
74-97-5	Bromochloromethane	50	55.0	110	56.4	113	3	70-130/25
75-27-4	Bromodichloromethane	50	59.9	120	59.6	119	1	70-130/25
75-25-2	Bromoform	50	49.1	98	49.5	99	1	70-130/25
74-83-9	Bromomethane	50	41.0	82	44.6	89	8	70-130/25
78-93-3	2-Butanone (MEK)	50	49.5	99	64.2	128	26* [a]	70-130/25
104-51-8	n-Butylbenzene	50	47.7	95	47.7	95	0	70-130/25
135-98-8	sec-Butylbenzene	50	45.6	91	46.3	93	2	70-130/25
98-06-6	tert-Butylbenzene	50	49.4	99	50.0	100	1	70-130/25
75-15-0	Carbon disulfide	50	49.1	98	47.1	94	4	70-130/25
56-23-5	Carbon tetrachloride	50	60.0	120	58.9	118	2	70-130/25
108-90-7	Chlorobenzene	50	46.4	93	46.5	93	0	70-130/25
75-00-3	Chloroethane	50	48.5	97	49.4	99	2	70-130/25
67-66-3	Chloroform	50	58.4	117	57.2	114	2	70-130/25
74-87-3	Chloromethane	50	44.3	89	47.1	94	6	70-130/25
95-49-8	o-Chlorotoluene	50	46.7	93	47.1	94	1	70-130/25
106-43-4	p-Chlorotoluene	50	48.7	97	50.4	101	3	70-130/25
108-20-3	Di-Isopropyl ether	50	49.5	99	49.1	98	1	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	48.9	98	50.4	101	3	70-130/25
124-48-1	Dibromochloromethane	50	52.2	104	52.3	105	0	70-130/25
106-93-4	1,2-Dibromoethane	50	46.6	93	46.6	93	0	70-130/25
95-50-1	1,2-Dichlorobenzene	50	47.5	95	47.9	96	1	70-130/25
541-73-1	1,3-Dichlorobenzene	50	48.8	98	49.4	99	1	70-130/25
106-46-7	1,4-Dichlorobenzene	50	49.3	99	50.8	102	3	70-130/25
75-71-8	Dichlorodifluoromethane	50	50.3	101	65.4	131* [b]	26* [b]	70-130/25
75-34-3	1,1-Dichloroethane	50	55.0	110	54.4	109	1	70-130/25
107-06-2	1,2-Dichloroethane	50	60.9	122	60.2	120	1	70-130/25
75-35-4	1,1-Dichloroethene	50	59.8	120	63.0	126	5	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	52.8	106	53.5	107	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	63.3	127	58.7	117	8	70-130/25
78-87-5	1,2-Dichloropropane	50	49.4	99	50.4	101	2	70-130/25
142-28-9	1,3-Dichloropropane	50	44.6	89	45.8	92	3	70-130/25
594-20-7	2,2-Dichloropropane	50	77.9	156* [c]	77.5	155* [c]	1	70-130/25
563-58-6	1,1-Dichloropropene	50	55.2	110	56.6	113	3	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2190-BS	M62629.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MSM2190-BSD	M62630.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	55.3	111	55.5	111	0	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	60.8	122	62.2	124	2	70-130/25
123-91-1	1,4-Dioxane	250	277	111	262	105	6	70-130/25
60-29-7	Ethyl Ether	50	53.6	107	52.3	105	2	70-130/25
100-41-4	Ethylbenzene	50	47.8	96	48.2	96	1	70-130/25
87-68-3	Hexachlorobutadiene	50	53.3	107	51.5	103	3	70-130/25
591-78-6	2-Hexanone	50	38.8	78	47.6	95	20	70-130/25
98-82-8	Isopropylbenzene	50	46.5	93	47.6	95	2	70-130/25
99-87-6	p-Isopropyltoluene	50	49.2	98	49.2	98	0	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	56.5	113	55.9	112	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	49.2	98	50.5	101	3	70-130/25
74-95-3	Methylene bromide	50	55.7	111	55.3	111	1	70-130/25
75-09-2	Methylene chloride	50	50.1	100	53.0	106	6	70-130/25
91-20-3	Naphthalene	50	49.1	98	49.7	99	1	70-130/25
103-65-1	n-Propylbenzene	50	44.6	89	45.2	90	1	70-130/25
100-42-5	Styrene	50	48.9	98	47.6	95	3	70-130/25
994-05-8	tert-Amyl Methyl Ether	50	54.0	108	55.8	112	3	70-130/25
637-92-3	tert-Butyl Ethyl Ether	50	57.6	115	57.8	116	0	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	54.0	108	54.2	108	0	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	43.3	87	46.1	92	6	70-130/25
127-18-4	Tetrachloroethene	50	48.1	96	47.3	95	2	70-130/25
109-99-9	Tetrahydrofuran	50	40.0	80	39.0	78	3	70-130/25
108-88-3	Toluene	50	54.4	109	54.8	110	1	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	52.6	105	51.9	104	1	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	51.9	104	51.5	103	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	56.5	113	55.8	112	1	70-130/25
79-00-5	1,1,2-Trichloroethane	50	52.7	105	53.3	107	1	70-130/25
79-01-6	Trichloroethene	50	48.0	96	50.0	100	4	70-130/25
75-69-4	Trichlorofluoromethane	50	52.3	105	55.2	110	5	70-130/25
96-18-4	1,2,3-Trichloropropane	50	46.5	93	48.0	96	3	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	48.2	96	49.2	98	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	48.9	98	50.1	100	2	70-130/25
75-01-4	Vinyl chloride	50	47.4	95	50.7	101	7	70-130/25
	m,p-Xylene	100	94.1	94	92.9	93	1	70-130/25
95-47-6	o-Xylene	50	46.5	93	47.1	94	1	70-130/25
1330-20-7	Xylene (total)	150	141	94	140	93	1	70-130/25

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSM2190-BS	M62629.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MSM2190-BSD	M62630.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	115%	112%	70-130%
2037-26-5	Toluene-D8	120%	119%	70-130%
460-00-4	4-Bromofluorobenzene	107%	110%	70-130%

(a) Outside control limits. Individual spike recoveries within acceptance limits.
(b) Outside control limits. Blank Spike meets program technical requirements.
(c) Outside control limits. Associated samples are non-detect for this compound.

6.2.1 6

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27454-8MS	M62644.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MC27454-8MSD	M62645.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MC27454-8 [a]	M62643.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Compound	MC27454-8 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		56.3	141	251* [b]	98.7	216* [b]	35* [c]	70-130/30
71-43-2	Benzene	ND		56.3	44.2	79	24.7	54* [b]	57* [c]	70-130/30
108-86-1	Bromobenzene	ND		56.3	36.2	64* [b]	21.3	47* [b]	52* [c]	70-130/30
74-97-5	Bromochloromethane	ND		56.3	50.6	90	32.1	70	45* [c]	70-130/30
75-27-4	Bromodichloromethane	ND		56.3	52.4	93	30.9	68* [b]	52* [c]	70-130/30
75-25-2	Bromoform	ND		56.3	48.7	87	31.4	69* [b]	43* [c]	70-130/30
74-83-9	Bromomethane	ND		56.3	39.2	70	36.2	79	8	70-130/30
78-93-3	2-Butanone (MEK)	ND		56.3	66.5	118	46.8	102	35* [c]	70-130/30
104-51-8	n-Butylbenzene	ND		56.3	29.9	53* [b]	14.8	32* [b]	68* [c]	70-130/30
135-98-8	sec-Butylbenzene	ND		56.3	31.6	56* [b]	16.0	35* [b]	66* [c]	70-130/30
98-06-6	tert-Butylbenzene	ND		56.3	35.8	64* [b]	18.0	39* [b]	66* [c]	70-130/30
75-15-0	Carbon disulfide	ND		56.3	44.9	80	23.7	52* [b]	62* [c]	70-130/30
56-23-5	Carbon tetrachloride	ND		56.3	50.3	89	27.3	60* [b]	59* [c]	70-130/30
108-90-7	Chlorobenzene	ND		56.3	36.9	66* [b]	20.4	45* [b]	58* [c]	70-130/30
75-00-3	Chloroethane	ND		56.3	45.5	81	42.4	93	7	70-130/30
67-66-3	Chloroform	ND		56.3	50.6	90	29.2	64* [b]	54* [c]	70-130/30
74-87-3	Chloromethane	ND		56.3	42.4	75	38.9	85	9	70-130/30
95-49-8	o-Chlorotoluene	ND		56.3	32.7	58* [b]	18.0	39* [b]	58* [c]	70-130/30
106-43-4	p-Chlorotoluene	ND		56.3	34.0	60* [b]	18.5	40* [b]	59* [c]	70-130/30
108-20-3	Di-Isopropyl ether	ND		56.3	44.6	79	25.4	55* [b]	55* [c]	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND		56.3	55.8	99	42.0	92	28	70-130/30
124-48-1	Dibromochloromethane	ND		56.3	47.7	85	29.7	65* [b]	47* [c]	70-130/30
106-93-4	1,2-Dibromoethane	ND		56.3	47.4	84	30.5	67* [b]	43* [c]	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		56.3	32.1	57* [b]	18.3	40* [b]	55* [c]	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		56.3	32.0	57* [b]	17.4	38* [b]	59* [c]	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		56.3	31.9	57* [b]	17.8	39* [b]	57* [c]	70-130/30
75-71-8	Dichlorodifluoromethane	ND		56.3	50.6	90	53.7	117	6	70-130/30
75-34-3	1,1-Dichloroethane	ND		56.3	48.9	87	27.5	60* [b]	56* [c]	70-130/30
107-06-2	1,2-Dichloroethane	ND		56.3	56.6	101	36.8	80	42* [c]	70-130/30
75-35-4	1,1-Dichloroethene	ND		56.3	62.7	111	29.4	64* [b]	72* [c]	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		56.3	46.5	83	27.2	59* [b]	52* [c]	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		56.3	58.7	104	31.9	70	59* [c]	70-130/30
78-87-5	1,2-Dichloropropane	ND		56.3	44.8	80	25.5	56* [b]	55* [c]	70-130/30
142-28-9	1,3-Dichloropropane	ND		56.3	44.9	80	27.0	59* [b]	50* [c]	70-130/30
594-20-7	2,2-Dichloropropane	ND		56.3	64.9	115	34.3	75	62* [c]	70-130/30
563-58-6	1,1-Dichloropropene	ND		56.3	49.9	89	26.0	57* [b]	63* [c]	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27454-8MS	M62644.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MC27454-8MSD	M62645.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MC27454-8 [a]	M62643.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Compound	MC27454-8 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		56.3	47.7	85	28.1	61* [b]	52* [c]	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		56.3	55.2	98	33.2	73	50* [c]	70-130/30
123-91-1	1,4-Dioxane	ND		281	342	122	256	112	29	70-130/30
60-29-7	Ethyl Ether	ND		56.3	51.7	92	33.0	72	44* [c]	70-130/30
100-41-4	Ethylbenzene	ND		56.3	38.4	68* [b]	20.7	45* [b]	60* [c]	70-130/30
87-68-3	Hexachlorobutadiene	ND		56.3	30.8	55* [b]	14.5	32* [b]	72* [c]	70-130/30
591-78-6	2-Hexanone	ND		56.3	56.3	100	41.2	90	31* [c]	70-130/30
98-82-8	Isopropylbenzene	ND		56.3	34.8	62* [b]	18.6	41* [b]	61* [c]	70-130/30
99-87-6	p-Isopropyltoluene	ND		56.3	32.5	58* [b]	16.1	35* [b]	67* [c]	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND		56.3	60.5	107	37.0	81	48* [c]	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		56.3	71.7	127	48.9	107	38* [c]	70-130/30
74-95-3	Methylene bromide	ND		56.3	53.7	95	33.9	74	45* [c]	70-130/30
75-09-2	Methylene chloride	ND		56.3	53.0	94	32.1	70	49* [c]	70-130/30
91-20-3	Naphthalene	ND		56.3	30.3	54* [b]	19.2	42* [b]	45* [c]	70-130/30
103-65-1	n-Propylbenzene	ND		56.3	32.2	57* [b]	16.7	36* [b]	63* [c]	70-130/30
100-42-5	Styrene	ND		56.3	23.2	41* [b]	9.8	21* [b]	81* [c]	70-130/30
994-05-8	tert-Amyl Methyl Ether	ND		56.3	54.6	97	33.2	73	49* [c]	70-130/30
637-92-3	tert-Butyl Ethyl Ether	ND		56.3	55.7	99	32.9	72	51* [c]	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		56.3	44.2	79	25.2	55* [b]	55* [c]	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		56.3	47.5	84	32.5	71	38* [c]	70-130/30
127-18-4	Tetrachloroethene	ND		56.3	39.1	69* [b]	20.4	45* [b]	63* [c]	70-130/30
109-99-9	Tetrahydrofuran	ND		56.3	65.4	116	47.4	104	32* [c]	70-130/30
108-88-3	Toluene	ND		56.3	47.4	84	25.5	56* [b]	60* [c]	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		56.3	26.7	47* [b]	14.3	31* [b]	60* [c]	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		56.3	27.5	49* [b]	14.0	31* [b]	65* [c]	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		56.3	49.6	88	26.8	59* [b]	60* [c]	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		56.3	51.4	91	32.3	71	46* [c]	70-130/30
79-01-6	Trichloroethene	ND		56.3	41.9	74	22.3	49* [b]	61* [c]	70-130/30
75-69-4	Trichlorofluoromethane	ND		56.3	47.4	84	45.6	100	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		56.3	51.3	91	35.2	77	37* [c]	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND		56.3	33.0	59* [b]	17.1	37* [b]	63* [c]	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND		56.3	34.6	61* [b]	18.3	40* [b]	62* [c]	70-130/30
75-01-4	Vinyl chloride	ND		56.3	46.7	83	43.3	95	8	70-130/30
	m,p-Xylene	ND		113	74.2	66* [b]	38.9	42* [b]	62* [c]	70-130/30
95-47-6	o-Xylene	ND		56.3	36.7	65* [b]	19.8	43* [b]	60* [c]	70-130/30
1330-20-7	Xylene (total)	ND		169	111	66* [b]	58.7	43* [b]	62* [c]	70-130/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MC27454-8MS	M62644.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MC27454-8MSD	M62645.D	1	01/03/14	AMY	n/a	n/a	MSM2190
MC27454-8 [a]	M62643.D	1	01/03/14	AMY	n/a	n/a	MSM2190

The QC reported here applies to the following samples: **Method:** SW846 8260C

MC27461-1

CAS No.	Surrogate Recoveries	MS	MSD	MC27454-8	Limits
1868-53-7	Dibromofluoromethane	116%	117%	119%	70-130%
2037-26-5	Toluene-D8	123%	120%	123%	70-130%
460-00-4	4-Bromofluorobenzene	109%	111%	110%	70-130%

(a) Sample received outside the holding time.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.
(c) High RPD due to possible matrix interference and/or sample non-homogeneity.

* = Outside of Control Limits.

Volatile Internal Standard Area Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Check Std:	MSM2190-CC2178	**Injection Date:**	01/03/14
Lab File ID:	M62628.D	**Injection Time:**	12:20
Instrument ID:	GCMSM	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	251052	9.35	383822	10.23	190560	13.50	257178	16.06	101247	6.84
Upper Limit [a]	502104	9.85	767644	10.73	381120	14.00	514356	16.56	202494	7.34
Lower Limit [b]	125526	8.85	191911	9.73	95280	13.00	128589	15.56	50624	6.34
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**
MSM2190-BS	243615	9.35	371411	10.22	184270	13.50	253915	16.06	91108	6.83
MSM2190-BSD	258703	9.35	386880	10.23	192041	13.51	258317	16.06	93226	6.84
MSM2190-MB	236284	9.35	343667	10.23	158236	13.51	227060	16.06	84899	6.84
MC27461-1	216362	9.35	320866	10.22	151045	13.51	214421	16.06	141813	6.83
ZZZZZZ	295341	9.35	448837	10.23	208798	13.51	287117	16.06	206634[c]	6.84
ZZZZZZ	279297	9.35	406918	10.22	192098	13.50	274263	16.06	195416	6.84
ZZZZZZ	272873	9.35	400492	10.23	187102	13.50	260111	16.06	180005	6.84
MC27454-8	267939	9.35	398940	10.23	188535	13.51	265928	16.06	195482	6.84
MC27454-8MS	261793	9.34	394287	10.22	194427	13.50	275830	16.06	186850	6.84
MC27454-8MSD	260957	9.35	397567	10.23	194759	13.51	266994	16.06	198943	6.84

IS 1 = Pentafluorobenzene
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5
IS 4 = 1,4-Dichlorobenzene-d4
IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Outside control limits. Target analytes not associated with this internal standard.

Volatile Surrogate Recovery Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8260C **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
MC27461-1	M62636.D	121.0	122.0	108.0
MC27454-8MS	M62644.D	116.0	123.0	109.0
MC27454-8MSD	M62645.D	117.0	120.0	111.0
MSM2190-BS	M62629.D	115.0	120.0	107.0
MSM2190-BSD	M62630.D	112.0	119.0	110.0
MSM2190-MB	M62632.D	116.0	121.0	110.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

New England ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-MB	W17045.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic acid	ND	490	61	ug/kg	
95-57-8	2-Chlorophenol	ND	250	11	ug/kg	
59-50-7	4-Chloro-3-methyl phenol	ND	490	12	ug/kg	
120-83-2	2,4-Dichlorophenol	ND	490	14	ug/kg	
105-67-9	2,4-Dimethylphenol	ND	490	80	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	980	120	ug/kg	
95-48-7	2-Methylphenol	ND	490	20	ug/kg	
	3&4-Methylphenol	ND	490	24	ug/kg	
88-75-5	2-Nitrophenol	ND	490	13	ug/kg	
100-02-7	4-Nitrophenol	ND	980	92	ug/kg	
87-86-5	Pentachlorophenol	ND	490	35	ug/kg	
108-95-2	Phenol	ND	250	14	ug/kg	
95-95-4	2,4,5-Trichlorophenol	ND	490	12	ug/kg	
88-06-2	2,4,6-Trichlorophenol	ND	490	12	ug/kg	
83-32-9	Acenaphthene	ND	98	13	ug/kg	
208-96-8	Acenaphthylene	ND	98	9.8	ug/kg	
98-86-2	Acetophenone	ND	490	11	ug/kg	
62-53-3	Aniline	ND	490	25	ug/kg	
120-12-7	Anthracene	ND	98	12	ug/kg	
56-55-3	Benzo(a)anthracene	ND	98	13	ug/kg	
50-32-8	Benzo(a)pyrene	ND	98	11	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	98	12	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	98	9.8	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	98	15	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	250	12	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	250	10	ug/kg	
91-58-7	2-Chloronaphthalene	ND	250	13	ug/kg	
106-47-8	4-Chloroaniline	ND	490	12	ug/kg	
218-01-9	Chrysene	ND	98	12	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	250	12	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	250	15	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	250	18	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	250	13	ug/kg	
122-66-7	1,2-Diphenylhydrazine	ND	250	11	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	250	14	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	250	13	ug/kg	

Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-MB	W17045.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

CAS No.	Compound	Result	RL	MDL	Units	Q
121-14-2	2,4-Dinitrotoluene	ND	490	33	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	490	12	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	250	25	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	98	12	ug/kg	
132-64-9	Dibenzofuran	ND	98	14	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	250	26	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	250	7.7	ug/kg	
84-66-2	Diethyl phthalate	33.5	250	12	ug/kg	J
131-11-3	Dimethyl phthalate	ND	250	14	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	250	9.1	ug/kg	
206-44-0	Fluoranthene	ND	98	13	ug/kg	
86-73-7	Fluorene	ND	98	13	ug/kg	
118-74-1	Hexachlorobenzene	ND	250	15	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	14	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	490	120	ug/kg	
67-72-1	Hexachloroethane	ND	250	12	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	98	11	ug/kg	
78-59-1	Isophorone	ND	250	11	ug/kg	
91-57-6	2-Methylnaphthalene	ND	98	12	ug/kg	
91-20-3	Naphthalene	ND	98	16	ug/kg	
98-95-3	Nitrobenzene	ND	250	13	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	250	14	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	250	15	ug/kg	
85-01-8	Phenanthrene	ND	98	13	ug/kg	
129-00-0	Pyrene	ND	98	12	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	14	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	64%	30-130%
4165-62-2	Phenol-d5	66%	30-130%
118-79-6	2,4,6-Tribromophenol	60%	30-130%
4165-60-0	Nitrobenzene-d5	69%	30-130%
321-60-8	2-Fluorobiphenyl	78%	30-130%
1718-51-0	Terphenyl-d14	83%	30-130%

7.1.1

Blank Spike Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-BS	W17046.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
65-85-0	Benzoic acid	2490	603	24* [a]	30-130
95-57-8	2-Chlorophenol	2490	1970	79	30-130
59-50-7	4-Chloro-3-methyl phenol	2490	2090	84	30-130
120-83-2	2,4-Dichlorophenol	2490	2060	83	30-130
105-67-9	2,4-Dimethylphenol	2490	2020	81	30-130
51-28-5	2,4-Dinitrophenol	2490	330	13* [a]	30-130
95-48-7	2-Methylphenol	2490	1910	77	30-130
	3&4-Methylphenol	4990	3710	74	30-130
88-75-5	2-Nitrophenol	2490	1990	80	30-130
100-02-7	4-Nitrophenol	2490	1720	69	30-130
87-86-5	Pentachlorophenol	2490	1150	46	30-130
108-95-2	Phenol	2490	2070	83	30-130
95-95-4	2,4,5-Trichlorophenol	2490	1940	78	30-130
88-06-2	2,4,6-Trichlorophenol	2490	2060	83	30-130
83-32-9	Acenaphthene	2490	2300	92	40-140
208-96-8	Acenaphthylene	2490	1880	75	40-140
98-86-2	Acetophenone	2490	1990	80	40-140
62-53-3	Aniline	2490	1050	42	40-140
120-12-7	Anthracene	2490	2150	86	40-140
56-55-3	Benzo(a)anthracene	2490	2320	93	40-140
50-32-8	Benzo(a)pyrene	2490	1980	79	40-140
205-99-2	Benzo(b)fluoranthene	2490	2290	92	40-140
191-24-2	Benzo(g,h,i)perylene	2490	2000	80	40-140
207-08-9	Benzo(k)fluoranthene	2490	2160	87	40-140
101-55-3	4-Bromophenyl phenyl ether	2490	2390	96	40-140
85-68-7	Butyl benzyl phthalate	2490	2280	91	40-140
91-58-7	2-Chloronaphthalene	2490	2250	90	40-140
106-47-8	4-Chloroaniline	2490	1180	47	40-140
218-01-9	Chrysene	2490	2200	88	40-140
111-91-1	bis(2-Chloroethoxy)methane	2490	1670	67	40-140
111-44-4	bis(2-Chloroethyl)ether	2490	2250	90	40-140
108-60-1	bis(2-Chloroisopropyl)ether	2490	2650	106	40-140
95-50-1	1,2-Dichlorobenzene	2490	1970	79	40-140
122-66-7	1,2-Diphenylhydrazine	2490	2460	99	40-140
541-73-1	1,3-Dichlorobenzene	2490	1970	79	40-140
106-46-7	1,4-Dichlorobenzene	2490	2040	82	40-140

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-BS	W17046.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
121-14-2	2,4-Dinitrotoluene	2490	2150	86	40-140
606-20-2	2,6-Dinitrotoluene	2490	2160	87	40-140
91-94-1	3,3'-Dichlorobenzidine	2490	1320	53	40-140
53-70-3	Dibenzo(a,h)anthracene	2490	2110	85	40-140
132-64-9	Dibenzofuran	2490	2080	83	40-140
84-74-2	Di-n-butyl phthalate	2490	2120	85	40-140
117-84-0	Di-n-octyl phthalate	2490	2390	96	40-140
84-66-2	Diethyl phthalate	2490	2330	93	40-140
131-11-3	Dimethyl phthalate	2490	2330	93	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	2490	2340	94	40-140
206-44-0	Fluoranthene	2490	2150	86	40-140
86-73-7	Fluorene	2490	2240	90	40-140
118-74-1	Hexachlorobenzene	2490	2410	97	40-140
87-68-3	Hexachlorobutadiene	2490	2250	90	40-140
77-47-4	Hexachlorocyclopentadiene	2490	2810	113	40-140
67-72-1	Hexachloroethane	2490	2060	83	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	2490	2080	83	40-140
78-59-1	Isophorone	2490	2190	88	40-140
91-57-6	2-Methylnaphthalene	2490	1980	79	40-140
91-20-3	Naphthalene	2490	2840	114	40-140
98-95-3	Nitrobenzene	2490	2270	91	40-140
621-64-7	N-Nitroso-di-n-propylamine	2490	2130	85	40-140
86-30-6	N-Nitrosodiphenylamine	2490	1960	79	40-140
85-01-8	Phenanthrene	2490	2180	87	40-140
129-00-0	Pyrene	2490	2320	93	40-140
120-82-1	1,2,4-Trichlorobenzene	2490	2250	90	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	81%	30-130%
4165-62-2	Phenol-d5	82%	30-130%
118-79-6	2,4,6-Tribromophenol	79%	30-130%
4165-60-0	Nitrobenzene-d5	86%	30-130%
321-60-8	2-Fluorobiphenyl	91%	30-130%
1718-51-0	Terphenyl-d14	92%	30-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-BS	W17046.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

(a) Outside control limits. Blank Spike meets program technical requirements.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-MS	W17047.D	1	01/07/14	KR	12/31/13	OP36403	MSW755
OP36403-MSD	W17048.D	1	01/07/14	KR	12/31/13	OP36403	MSW755
MC27454-1 [a]	W17049.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

CAS No.	Compound	MC27454-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic acid	ND		2900	419	14* [b]	397	13* [b]	5	30-130/30
95-57-8	2-Chlorophenol	ND		2900	2280	79	2310	78	1	30-130/30
59-50-7	4-Chloro-3-methyl phenol	ND		2900	2360	81	2420	82	3	30-130/30
120-83-2	2,4-Dichlorophenol	ND		2900	2330	80	2360	80	1	30-130/30
105-67-9	2,4-Dimethylphenol	ND		2900	2340	81	2320	79	1	30-130/30
51-28-5	2,4-Dinitrophenol	ND		2900	263	9* [b]	347	12* [b]	28	30-130/30
95-48-7	2-Methylphenol	ND		2900	2180	75	2160	73	1	30-130/30
	3&4-Methylphenol	ND		5800	4320	74	4220	72	2	30-130/30
88-75-5	2-Nitrophenol	ND		2900	2220	77	2240	76	1	30-130/30
100-02-7	4-Nitrophenol	ND		2900	1420	49	1840	62	26	30-130/30
87-86-5	Pentachlorophenol	ND		2900	1330	46	1400	47	5	30-130/30
108-95-2	Phenol	ND		2900	2390	82	2420	82	1	30-130/30
95-95-4	2,4,5-Trichlorophenol	ND		2900	2210	76	2240	76	1	30-130/30
88-06-2	2,4,6-Trichlorophenol	ND		2900	2380	82	2450	83	3	30-130/30
83-32-9	Acenaphthene	ND		2900	2640	91	2660	90	1	40-140/30
208-96-8	Acenaphthylene	ND		2900	2190	75	2220	75	1	40-140/30
98-86-2	Acetophenone	ND		2900	2300	79	2320	79	1	40-140/30
62-53-3	Aniline	ND		2900	1170	40	1260	43	7	40-140/30
120-12-7	Anthracene	ND		2900	2380	82	2440	83	2	40-140/30
56-55-3	Benzo(a)anthracene	ND		2900	2580	89	2620	89	2	40-140/30
50-32-8	Benzo(a)pyrene	ND		2900	2210	76	2240	76	1	40-140/30
205-99-2	Benzo(b)fluoranthene	ND		2900	2550	88	2590	88	2	40-140/30
191-24-2	Benzo(g,h,i)perylene	ND		2900	2280	79	2320	79	2	40-140/30
207-08-9	Benzo(k)fluoranthene	ND		2900	2380	82	2400	81	1	40-140/30
101-55-3	4-Bromophenyl phenyl ether	ND		2900	2710	93	2750	93	1	40-140/30
85-68-7	Butyl benzyl phthalate	ND		2900	2590	89	2590	88	0	40-140/30
91-58-7	2-Chloronaphthalene	ND		2900	2580	89	2610	88	1	40-140/30
106-47-8	4-Chloroaniline	ND		2900	1490	51	1640	56	10	40-140/30
218-01-9	Chrysene	ND		2900	2490	86	2530	86	2	40-140/30
111-91-1	bis(2-Chloroethoxy)methane	ND		2900	1930	67	1940	66	1	40-140/30
111-44-4	bis(2-Chloroethyl)ether	ND		2900	2640	91	2660	90	1	40-140/30
108-60-1	bis(2-Chloroisopropyl)ether	ND		2900	3000	103	3110	105	4	40-140/30
95-50-1	1,2-Dichlorobenzene	ND		2900	2310	80	2310	78	0	40-140/30
122-66-7	1,2-Diphenylhydrazine	ND		2900	2800	97	2840	96	1	40-140/30
541-73-1	1,3-Dichlorobenzene	ND		2900	2260	78	2280	77	1	40-140/30
106-46-7	1,4-Dichlorobenzene	ND		2900	2350	81	2410	82	3	40-140/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-MS	W17047.D	1	01/07/14	KR	12/31/13	OP36403	MSW755
OP36403-MSD	W17048.D	1	01/07/14	KR	12/31/13	OP36403	MSW755
MC27454-1 [a]	W17049.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

CAS No.	Compound	MC27454-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
121-14-2	2,4-Dinitrotoluene	ND		2900	2530	87	2540	86	0	40-140/30
606-20-2	2,6-Dinitrotoluene	ND		2900	2530	87	2520	85	0	40-140/30
91-94-1	3,3'-Dichlorobenzidine	ND		2900	1720	59	1820	62	6	40-140/30
53-70-3	Dibenzo(a,h)anthracene	ND		2900	2370	82	2470	84	4	40-140/30
132-64-9	Dibenzofuran	ND		2900	2380	82	2440	83	2	40-140/30
84-74-2	Di-n-butyl phthalate	ND		2900	2370	82	2410	82	2	40-140/30
117-84-0	Di-n-octyl phthalate	ND		2900	2690	93	2730	93	1	40-140/30
84-66-2	Diethyl phthalate	22.7	J	2900	2630	90	2660	89	1	40-140/30
131-11-3	Dimethyl phthalate	ND		2900	2750	95	2760	94	0	40-140/30
117-81-7	bis(2-Ethylhexyl)phthalate	13.0	J	2900	2780	95	2670	90	4	40-140/30
206-44-0	Fluoranthene	ND		2900	2370	82	2430	82	3	40-140/30
86-73-7	Fluorene	ND		2900	2550	88	2590	88	2	40-140/30
118-74-1	Hexachlorobenzene	ND		2900	2730	94	2800	95	3	40-140/30
87-68-3	Hexachlorobutadiene	ND		2900	2560	88	2590	88	1	40-140/30
77-47-4	Hexachlorocyclopentadiene	ND		2900	3210	111	3390	115	5	40-140/30
67-72-1	Hexachloroethane	ND		2900	2360	81	2380	81	1	40-140/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		2900	2340	81	2410	82	3	40-140/30
78-59-1	Isophorone	ND		2900	2520	87	2570	87	2	40-140/30
91-57-6	2-Methylnaphthalene	ND		2900	2200	76	2240	76	2	40-140/30
91-20-3	Naphthalene	ND		2900	3200	110	3240	110	1	40-140/30
98-95-3	Nitrobenzene	ND		2900	2560	88	2640	89	3	40-140/30
621-64-7	N-Nitroso-di-n-propylamine	ND		2900	2470	85	2480	84	0	40-140/30
86-30-6	N-Nitrosodiphenylamine	ND		2900	2200	76	2260	77	3	40-140/30
85-01-8	Phenanthrene	ND		2900	2490	86	2500	85	0	40-140/30
129-00-0	Pyrene	ND		2900	2650	91	2620	89	1	40-140/30
120-82-1	1,2,4-Trichlorobenzene	ND		2900	2580	89	2650	90	3	40-140/30

CAS No.	Surrogate Recoveries	MS	MSD	MC27454-1	Limits
367-12-4	2-Fluorophenol	79%	79%	79%	30-130%
4165-62-2	Phenol-d5	81%	80%	77%	30-130%
118-79-6	2,4,6-Tribromophenol	80%	80%	68%	30-130%
4165-60-0	Nitrobenzene-d5	84%	83%	82%	30-130%
321-60-8	2-Fluorobiphenyl	91%	91%	89%	30-130%
1718-51-0	Terphenyl-d14	89%	89%	90%	30-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36403-MS	W17047.D	1	01/07/14	KR	12/31/13	OP36403	MSW755
OP36403-MSD	W17048.D	1	01/07/14	KR	12/31/13	OP36403	MSW755
MC27454-1 [a]	W17049.D	1	01/07/14	KR	12/31/13	OP36403	MSW755

The QC reported here applies to the following samples: **Method:** SW846 8270D

MC27461-2

(a) Sample received outside the holding time.
(b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

* = Outside of Control Limits.

Semivolatile Internal Standard Area Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Check Std:	MSW755-CC729	**Injection Date:**	01/07/14
Lab File ID:	W17043.D	**Injection Time:**	15:56
Instrument ID:	GCMSW	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	91089	4.09	337073	5.15	215492	6.68	364360	7.98	375970	10.57	308814	12.28
Upper Limit [a]	182178	4.59	674146	5.65	430984	7.18	728720	8.48	751940	11.07	617628	12.78
Lower Limit [b]	45545	3.59	168537	4.65	107746	6.18	182180	7.48	187985	10.07	154407	11.78
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**	**IS 6 AREA**	**RT**
MC27461-2	88644	4.09	326871	5.15	193061	6.68	349370	7.98	317009	10.56	277762	12.28
OP36403-MB	89891	4.09	331913	5.15	198717	6.68	358562	7.97	354642	10.56	291774	12.27
OP36403-BS	90112	4.09	325104	5.15	198436	6.68	358477	7.98	346246	10.56	284150	12.27
OP36403-MS	92382	4.09	333340	5.15	198116	6.68	359043	7.97	337528	10.56	275993	12.27
OP36403-MSD	95116	4.09	344600	5.15	204993	6.68	375090	7.97	356752	10.56	293244	12.27
MC27454-1	94605	4.09	356106	5.15	213207	6.68	384019	7.97	360090	10.56	295947	12.27
ZZZZZZ	80858	4.09	304283	5.15	176634	6.69	308691	7.99	306339	10.57	270438	12.28
ZZZZZZ	88206	4.09	322883	5.15	191078	6.68	331420	7.97	336739	10.56	301674	12.28

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Semivolatile Surrogate Recovery Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
MC27461-2	W17044.D	59.0	60.0	56.0	75.0	89.0	86.0
OP36403-BS	W17046.D	81.0	82.0	79.0	86.0	91.0	92.0
OP36403-MB	W17045.D	64.0	66.0	60.0	69.0	78.0	83.0
OP36403-MS	W17047.D	79.0	81.0	80.0	84.0	91.0	89.0
OP36403-MSD	W17048.D	79.0	80.0	80.0	83.0	91.0	89.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	30-130%
S2 = Phenol-d5	30-130%
S3 = 2,4,6-Tribromophenol	30-130%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

New England ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36411-MB	DE2334.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

MC27461-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	18000	18000	ug/kg	
	C9-C18 Aliphatics	ND	8800	8800	ug/kg	
	C19-C36 Aliphatics	ND	8800	8800	ug/kg	
	C11-C22 Aromatics	ND	18000	18000	ug/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	95%	40-140%
321-60-8	2-Fluorobiphenyl	86%	40-140%
580-13-2	2-Bromonaphthalene	76%	40-140%
3386-33-2	1-Chlorooctadecane	84%	40-140%

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Method Blank Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36433-MB	BK33658.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108

The QC reported here applies to the following samples: **Method:** SW846 8082

MC27461-2

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	15	ug/kg	
11104-28-2	Aroclor 1221	ND	33	19	ug/kg	
11141-16-5	Aroclor 1232	ND	33	15	ug/kg	
53469-21-9	Aroclor 1242	ND	33	16	ug/kg	
12672-29-6	Aroclor 1248	ND	33	14	ug/kg	
11097-69-1	Aroclor 1254	ND	33	24	ug/kg	
11096-82-5	Aroclor 1260	ND	33	16	ug/kg	
37324-23-5	Aroclor 1262	ND	33	28	ug/kg	
11100-14-4	Aroclor 1268	ND	33	15	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	91%	30-150%
877-09-8	Tetrachloro-m-xylene	101%	30-150%
2051-24-3	Decachlorobiphenyl	115%	30-150%
2051-24-3	Decachlorobiphenyl	122%	30-150%

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36411-BS	DE2335.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287
OP36411-BSD	DE2336.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

MC27461-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
	C11-C22 Aromatics (Unadj.)	69000	79100	115	75100	110	5	40-140/25
	C9-C18 Aliphatics	25900	19800	77	19500	76	2	40-140/25
	C19-C36 Aliphatics	34500	30800	89	30200	89	2	40-140/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	111%	108%	40-140%
321-60-8	2-Fluorobiphenyl	95%	95%	40-140%
580-13-2	2-Bromonaphthalene	93%	95%	40-140%
3386-33-2	1-Chlorooctadecane	85%	83%	40-140%

Sample	Compound	Col #1	Col #2	Breakthrough	Limit
OP36411-BS	2-Methylnaphthalene	3690	3.4	0.1%	5.0
OP36411-BS	Naphthalene	3870	6.1	0.2%	5.0
OP36411-BSD	2-Methylnaphthalene	3540	5.8	0.2%	5.0
OP36411-BSD	Naphthalene	3710	4.7	0.1%	5.0

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36433-BS	BK33659.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108
OP36433-BSD	BK33660.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108

The QC reported here applies to the following samples: **Method:** SW846 8082

MC27461-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	259	233	90	219	84	6	40-140/30
11104-28-2	Aroclor 1221		ND		ND		nc	40-140/30
11141-16-5	Aroclor 1232		ND		ND		nc	40-140/30
53469-21-9	Aroclor 1242		ND		ND		nc	40-140/30
12672-29-6	Aroclor 1248		ND		ND		nc	40-140/30
11097-69-1	Aroclor 1254		ND		ND		nc	40-140/30
11096-82-5	Aroclor 1260	259	253	98	233	90	8	40-140/30
37324-23-5	Aroclor 1262		ND		ND		nc	40-140/30
11100-14-4	Aroclor 1268		ND		ND		nc	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	82%	78%	30-150%
877-09-8	Tetrachloro-m-xylene	97%	93%	30-150%
2051-24-3	Decachlorobiphenyl	105%	97%	30-150%
2051-24-3	Decachlorobiphenyl	113%	105%	30-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36411-MS	DE2337.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287
OP36411-MSD	DE2338.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287
MC27461-2	DE2339.D	1	01/02/14	ZB	12/31/13	OP36411	GDE287

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

MC27461-2

CAS No.	Compound	MC27461-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
	C11-C22 Aromatics (Unadj.)	57700		88100	186000	146* [a]	163000	124	13	40-140/25
	C9-C18 Aliphatics	ND		33000	29600	90	23200	73	24	40-140/25
	C19-C36 Aliphatics	ND		44000	45100	102	41700	98	8	40-140/25

CAS No.	Surrogate Recoveries	MS	MSD	MC27461-2	Limits
84-15-1	o-Terphenyl	105%	106%	103%	40-140%
321-60-8	2-Fluorobiphenyl	93%	86%	90%	40-140%
580-13-2	2-Bromonaphthalene	73%	86%	75%	40-140%
3386-33-2	1-Chlorooctadecane	86%	80%	82%	40-140%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

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Matrix Spike/Matrix Spike Duplicate Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP36433-MS	BK33661.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108
OP36433-MSD	BK33662.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108
MC27461-2	BK33663.D	1	01/06/14	NK	01/03/14	OP36433	GBK1108

The QC reported here applies to the following samples: **Method:** SW846 8082

MC27461-2

CAS No.	Compound	MC27461-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		320	330	103	274	85	19	40-140/50
11104-28-2	Aroclor 1221	ND			ND		ND		nc	40-140/50
11141-16-5	Aroclor 1232	ND			ND		ND		nc	40-140/50
53469-21-9	Aroclor 1242	ND			ND		ND		nc	40-140/50
12672-29-6	Aroclor 1248	ND			ND		ND		nc	40-140/50
11097-69-1	Aroclor 1254	ND			ND		ND		nc	40-140/50
11096-82-5	Aroclor 1260	ND		320	324	101	254	79	24	40-140/50
37324-23-5	Aroclor 1262	ND			ND		ND		nc	40-140/50
11100-14-4	Aroclor 1268	ND			ND		ND		nc	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	MC27461-2	Limits
877-09-8	Tetrachloro-m-xylene	95%	84%	93%	30-150%
877-09-8	Tetrachloro-m-xylene	93%	80%	95%	30-150%
2051-24-3	Decachlorobiphenyl	110%	96%	106%	30-150%
2051-24-3	Decachlorobiphenyl	111%	80%	106%	30-150%

* = Outside of Control Limits.

Semivolatile Surrogate Recovery Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: SW846 8082 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
MC27461-2	BK33663.D	93.0	95.0	106.0	106.0
OP36433-BS	BK33659.D	82.0	97.0	105.0	113.0
OP36433-BSD	BK33660.D	78.0	93.0	97.0	105.0
OP36433-MB	BK33658.D	91.0	101.0	115.0	122.0
OP36433-MS	BK33661.D	95.0	93.0	110.0	111.0
OP36433-MSD	BK33662.D	84.0	80.0	96.0	80.0

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	30-150%
S2 = Decachlorobiphenyl	30-150%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

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Semivolatile Surrogate Recovery Summary

Job Number: MC27461
Account: GEI GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Method: MADEP EPH REV 1.1 **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S2 [a]	S3 [a]	S4 [b]
MC27461-2	DE2339.D	103.0	90.0	75.0	82.0
OP36411-BS	DE2335.D	111.0	95.0	93.0	85.0
OP36411-BSD	DE2336.D	108.0	95.0	95.0	83.0
OP36411-MB	DE2334.D	95.0	86.0	76.0	84.0
OP36411-MS	DE2337.D	105.0	93.0	73.0	86.0
OP36411-MSD	DE2338.D	106.0	86.0	86.0	80.0

Surrogate Compounds	Recovery Limits
S1 = o-Terphenyl	40-140%
S2 = 2-Fluorobiphenyl	40-140%
S3 = 2-Bromonaphthalene	40-140%
S4 = 1-Chlorooctadecane	40-140%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

New England ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/02/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	20	2.2	3.6		
Antimony	1.0	.11	.15		
Arsenic	1.0	.12	.21	-0.090	<1.0
Barium	5.0	.053	.073	0.030	<5.0
Beryllium	0.40	.015	.024		
Boron	10	.049	.11		
Cadmium	0.40	.004	.042	0.010	<0.40
Calcium	500	.74	6.3		
Chromium	1.0	.038	.095	0.050	<1.0
Cobalt	5.0	.015	.047		
Copper	2.5	.052	.56		
Gold	5.0	.14	.43		
Iron	10	.5	.87		
Lead	1.0	.095	.17	0.0	<1.0
Magnesium	500	4.7	5.1		
Manganese	1.5	.004	.04		
Molybdenum	10	.029	.07		
Nickel	4.0	.025	.044		
Palladium	5.0	.19	.64		
Platinum	5.0	.59	1.5		
Potassium	500	5.6	8.6		
Selenium	1.0	.18	.35	0.040	<1.0
Silicon	10	.13	3.3		
Silver	0.50	.056	.13	-0.030	<0.50
Sodium	500	3.3	3.3		
Sulfur	5.0	.34	.82		
Strontium	1.0	.015	.03		
Thallium	1.0	.098	.13		
Tin	10	.035	.14		
Titanium	5.0	.044	.14		
Tungsten	10	.56	.94		
Vanadium	1.0	.058	.13	-0.020	<1.0
Zinc	2.0	.021	.16		

ACCUTEST LABORATORIES
MC27461

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal			
Zirconium	5.0	.18	.088

Associated samples MP22338: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.1.1 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/02/14

Metal	MC27454-5 Original MS		Spikelot MPICP	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	11.1	60.9	54.4	91.6	75-125
Barium	79.1	290	217	97.0	75-125
Beryllium					
Boron					
Cadmium	0.098	51.1	54.4	93.8	75-125
Calcium					
Chromium	8.5	58.3	54.4	91.6	75-125
Cobalt					
Copper					
Gold					
Iron					
Lead	10.8	110	109	91.2	75-125
Magnesium					
Manganese					
Molybdenum					
Nickel					
Palladium					
Platinum					
Potassium					
Selenium	0.57	51.9	54.4	94.4	75-125
Silicon					
Silver	0.0	21.3	21.7	98.0	75-125
Sodium					
Sulfur					
Strontium					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium	13.7	64.1	54.4	92.7	75-125
Zinc					

ACCUTEST LABORATORIES
MC27461

9.1.2

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal
Zirconium

Associated samples MP22338: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

9.1.2 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/02/14

Metal	MC27454-5 Original	MSD	Spikelot MPICP	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	11.1	61.2	54.8	91.4	0.5	20
Barium	79.1	286	219	94.4	1.4	20
Beryllium						
Boron						
Cadmium	0.098	50.5	54.8	92.0	1.2	20
Calcium						
Chromium	8.5	56.6	54.8	87.8	3.0	20
Cobalt						
Copper						
Gold						
Iron						
Lead	10.8	110	110	90.5	0.0	20
Magnesium						
Manganese						
Molybdenum						
Nickel						
Palladium						
Platinum						
Potassium						
Selenium	0.57	51.9	54.8	93.7	0.0	20
Silicon						
Silver	0.0	21.0	21.9	95.8	1.4	20
Sodium						
Sulfur						
Strontium						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium	13.7	62.9	54.8	89.8	1.9	20
Zinc						

ACCUTEST. LABORATORIES
MC27461

9.1.2
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal
Zirconium

Associated samples MP22338: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

9.1.2 9

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:			01/02/14				01/02/14	
Metal	BSP Result	Spikelot MPICP	% Rec	QC Limits	LCS Result	Spikelot MPLCS78	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic	54.2	50	108.4	80-120	94.7	94.5	100.2	82-117
Barium	201	200	100.5	80-120	164	166	98.8	83-116
Beryllium								
Boron								
Cadmium	49.5	50	99.0	80-120	59.3	59.9	99.0	84-116
Calcium								
Chromium	48.9	50	97.8	80-120	64.6	69.3	93.2	81-119
Cobalt								
Copper								
Gold								
Iron								
Lead	99.5	100	99.5	80-120	87.3	91.7	95.2	82-118
Magnesium								
Manganese								
Molybdenum								
Nickel								
Palladium								
Platinum								
Potassium								
Selenium	51.2	50	102.4	80-120	162	159	101.9	79-121
Silicon								
Silver	21.9	20	109.5	80-120	34.4	33.9	101.5	66-134
Sodium								
Sulfur								
Strontium								
Thallium								
Tin								
Titanium								
Tungsten								
Vanadium	52.1	50	104.2	80-120	50.8	56.3	90.2	73-127
Zinc								

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal
Zirconium

Associated samples MP22338: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.1.3
6

SERIAL DILUTION RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/1

Prep Date: 01/02/14

Metal	MC27454-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	102	109	7.6	0-10
Barium	728	826	13.6 (a)	0-10
Beryllium				
Boron				
Cadmium	0.900	0.700	22.2 (b)	0-10
Calcium				
Chromium	77.9	92.0	18.1 (a)	0-10
Cobalt				
Copper				
Gold				
Iron				
Lead	99.2	113	13.5 (a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Palladium				
Platinum				
Potassium				
Selenium	5.20	0.00	100.0(b)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Sulfur				
Strontium				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium	126	150	19.7 (a)	0-10
Zinc				

ACCUTEST LABORATORIES
MC27461

SERIAL DILUTION RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22338
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal
Zirconium

Associated samples MP22338: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

9.1.4

9

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22346
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 01/06/14

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.0029	.0097	0.0035	<0.033

Associated samples MP22346: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.2.1

ACCUTEST LABORATORIES
MC27461

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22346
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 01/06/14

Metal	MC27454-2 Original	MS	Spikelot HGRWS1	% Rec	QC Limits
Mercury	0.016	0.57	0.542	102.3	80-120

Associated samples MP22346: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

9.2.2 9

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22346
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 01/06/14

Metal	MC27454-2 Original	MSD	Spikelot HGRWS1	% Rec	MSD RPD	QC Limit
Mercury	0.016	0.58	0.542	104.1	1.7	20

Associated samples MP22346: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

9.2.2

6

ACCUTEST LABORATORIES

MC27461

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

QC Batch ID: MP22346
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date:		01/06/14				01/06/14		
Metal	BSP Result	Spikelot HGRWS1	% Rec	QC Limits	LCS Result	Spikelot HGLCS78	% Rec	QC Limits
Mercury	0.50	0.5	100.0	80-120	4.2	4.05	103.7	72-128

Associated samples MP22346: MC27461-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

9.2.3
6

New England ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP17102/GN45654	0.40	0.0	mg/kg	40	40.1	100.3	80-120%
Chromium, Hexavalent	GP17102/GN45654			mg/kg	1200	1210	100.8	80-120%
Cyanide Reactivity	GP17092/GN45626	1.5	0.0	mg/kg	250	25.3	10.1	-%
Specific Conductivity	GN45629	0.50	0.0	umhos/cm				
Sulfide Reactivity	GP17093/GN45627	50	0.0	mg/kg	500	400	80.0	-%

Associated Samples:
Batch GN45629: MC27461-2
Batch GP17092: MC27461-2
Batch GP17093: MC27461-2
Batch GP17102: MC27461-2
(*) Outside of QC limits

10.1
10

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP17102/GN45654	MC27461-2	mg/kg	0.62	0.51	19.5	0-20%
Cyanide Reactivity	GP17092/GN45626	MC27461-2	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN45630	MC27461-2	mv	436	434	0.5	0-20%
Solids, Percent	GN45635	MC27461-2	%	81.7	82	0.4	0-20%
Specific Conductivity	GN45629	MC27461-2	umhos/cm	2.3	234	1.3	0-20%
Sulfide Reactivity	GP17093/GN45627	MC27461-2	mg/kg	0.0	0.0	0.0	0-20%
pH	GN45628	MC27461-2	su	7.4	7.4	0.0	0-20%

Associated Samples:
Batch GN45628: MC27461-2
Batch GN45629: MC27461-2
Batch GN45630: MC27461-2
Batch GN45635: MC27461-1, MC27461-2
Batch GP17092: MC27461-2
Batch GP17093: MC27461-2
Batch GP17102: MC27461-2
(*) Outside of QC limits

10.2 10

ACCUTEST LABORATORIES
MC27461

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: MC27461
Account: GEI - GEI Consultants, Inc.
Project: GEI Tufts Street Somerville MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP17102/GN45654	MC27461-2	mg/kg	0.62	49	46.3	93.3	75-125%
Chromium, Hexavalent	GP17102/GN45654	MC27461-2	mg/kg	0.62	779	827	106.0	75-125%
Cyanide Reactivity	GP17092/GN45626	MC27461-2	mg/kg	0.0	306	30.2	9.9	-%
Sulfide Reactivity	GP17093/GN45627	MC27461-2	mg/kg	0.0	612	490	80.1	-%

Associated Samples:
Batch GP17092: MC27461-2
Batch GP17093: MC27461-2
Batch GP17102: MC27461-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Appendix C

Test Pit Logs

TEST PIT LOG

TP101

Project	Tufts St. - 34 Knowlton St.	**PG.**	1 **OF** 1
City/Town	Somerville MA	**Location**	34 Knowlton Street
Client	Sterling Construction & Development LLC		near Knowlton Street.
Contractor	Tufts Construction, Inc.	**Ground El.**	NM
Equipment/Reach	Unknown	**Datum**	
Operator	Peter Tufts **GEI Rep** M. Keller/J. Roman	**GEI Proj. No.**	04516-3
Weather	30's F, Light Snow	**Date**	12/10/2013

Depth	Sample No. and Type	Sample Depth (ft)	Soil Description
	S1	0-4'	S1: SILTY SAND WITH GRAVEL (SM) ~40% fine to medium sand, ~40% subangular gravel up to 14 inches, ~20% nonplastic fines, brown with some tan, dry. Contains coal ash, clinkers, and brick fragments. FILL.
2.0			
4.0			Bottom of Test Pit at 4'.
6			

Notes: 045163-TP-COMP was collected from TP101 and TP102 at 1355 to be tested for Disposal Parameters.
GEI was not on-site during the excavation of the test pits. Three jar head space readings were collected from the soil stockpile next to TP101 and were 0.1 parts per million.

Pit Dimensions (ft)	
length	5.5
width	3.5
depth	4

GEI Consultants

TEST PIT LOG

TP102

Project	Tufts St. - 34 Knowlton St.			**PG.**	1 **OF** 1
City/Town	Somerville MA			**Location**	34 Knowlton Street
Client	Sterling Construction & Development LLC				rear of property.
Contractor	Tufts Construction, Inc.			**Ground El.**	NM
Equipment/Reach	Unknown			**Datum**	
Operator	Peter Tufts	**GEI Rep**	M. Keller/J. Roman	**GEI Proj. No.**	04516-3
Weather	30's F, Light Snow			**Date**	12/10/2013

Depth	Sample No. and Type	Sample Depth (ft)	Soil Description
	S1	0-1.5'	S1: SILTY SAND WITH GRAVEL (SM) ~50% fine to course sand, ~30% nonplastic fines, ~20% subangular to subrounded gravel up to 4 inches, brown, dry. Contains coal ash, clinkers, and brick fragments. FILL.
2.0	S2	1.5-3.5'	S2: SILTY SAND (SM) ~60% fine to medium sand, ~30% nonplastic fines, ~10% subangular gravel up to 1/2 inches, tan, dry. Contains some roots. FILL.
4.0	S3	3.5-4.0'	S3: Similar to S1.
6			Bottom of Test Pit at 4'.

Notes: 045163-TP-COMP was collected from TP101 and TP102 at 1355 to be tested for Disposal Parameters. 045163-TP102-S2 was collected at 1350 to be tested for VOCs from locaiton stockpile location which had the highest jar head space reading.
GEI was not on-site during the excavation of the test pits. Three jar head space readings were collected from the soil stockpile next to TP102 and ranged between 0.7 to 3.4 parts per million.

Pit Dimensions (ft)	
length	5.5
width	3.5
depth	4

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Geotechnical
Environmental and
Water Resources
Engineering

Appendix D

Smoke Test Summary Memo

Memo

To: Ileen Gladstone, PE, LSP

From: Joe Roman and Bill Simons, P.G, LSP

Date: January 30, 2014

Re: Vapor Barrier Installation and Smoke Testing
34 Knowlton Street
Somerville, Massachusetts
GEI Project No. 04516-3

This memorandum presents GEI's observations of the vapor barrier and ventilation piping system installation and confirmatory smoke testing of the integrity of the vapor barrier installed at 34 Knowlton Street in Somerville, Massachusetts.

GEI observed installation of vapor intrusion mitigation measures as part of construction of a two-family residential building at 34 Knowlton Street. GEI submitted a Release Abatement Measure (RAM) Plan on behalf of the building developer (Sterling Construction) on December 4, 2013. RAM activities included installation of a vapor barrier and sub-slab ventilation piping beneath the building and ventilation piping through the building envelope, and management of potentially contaminated soil. Building construction is expected to be completed in spring 2014.

GEI observed the installation of a geotextile-filter fabric at the bottom of footing elevation, a PVC piping network amidst a washed gravel layer, washed gravel from the bottom of the footing elevation to the top of footing elevation encompassing the PVC ventilation piping network, a 20 mil vapor barrier installed in 2 layers resulting in 40 mil installation thickness, and ventilation piping routed vertically through building to above the roofline. Tufts Construction (Tufts) was retained by Sterling Construction to install the vapor barrier and ventilation piping.

GEI visited the site on the following days to confirm vapor intrusion mitigation measures were installed in general conformance with the RAM Plan:

- January 10, 2014 – GEI observed freshly poured foundation footings and confirmed excavation was completed to the bottom of footing elevation.
- January 15, 2014 – GEI observed installation of sub slab ventilation piping in accordance with the RAM Plan.
- January 16, 2014 – GEI observed installation of the washed gravel layer and overlying filter fabric layer.

- January 24, 2014 – GEI observed installation of the 20 mil vapor barrier with seam sealant tape at support column penetrations and barrier seams. GEI recommended to the contractor that bituthene mastic be used to seal penetrations and the floor wall interface in accordance with the RAM Plan.

- January 29, 2014 – GEI observed initial completion of the vapor barrier installation and started smoke testing to confirm barrier integrity. GEI observed leaks and requested Tufts return the following day to repair leaks in conjunction with smoke testing.

- January 30, 2014 – GEI observed smoke testing and completion of the vapor barrier installation.

Tufts reportedly installed the vapor barrier on January 23, 24, and 25 2014. On January 29 and 30, 2014 GEI inspected the vapor barrier installation and GEI retained A-Zoulias Environmental (A-Zoulias) to conduct smoke testing of the vapor barrier to confirm its integrity. A-Zoulias used a Firebase™ smoke generator and a 12 inch ventilation fan to inject smoke beneath the vapor barrier to identify leaks that may exist after initial installation. The smoke generator converts a water-based smoke fluid into a non-toxic and non-flammable fog/smoke. The fan and smoke generator are capable of generating up to 1,000 cubic feet per minute of concentrated smoke. The smoke was injected beneath the vapor barrier through the newly installed ventilation piping and directly through the vapor barrier using a 3 inch diameter hole which was repaired upon completion of the testing. The smoke was injected at short intervals, approximately 1 to 5 minutes, or until leaks were identified.

On January 29, 2014 GEI and A-Zoulias observed numerous pinhole leaks in the vapor barrier and leaks along the floor wall interface. GEI recommended to Tufts that they address the leaks using a combination of vapor barrier seam sealant tape and bituthene mastic. On January 30, 2014 GEI, A-Zoulias, and Tufts observed an initial test to confirm leak locations. Tufts repaired the identified leaks. After 5 follow up tests, Tufts had repaired all the observed pin hole leaks in the vapor barrier, leaks at the taped seams, and added additional vapor barrier seam tape and bituthene mastic to the floor wall interface. The last smoke test lasted for approximately 15 minutes and caused the vapor barrier to balloon upwards several inches with no smoke being observed leaking through the vapor barrier or at the floor wall interface.

Upon test completion GEI indicated to Tufts that the vapor barrier appeared competent and that we did not observe additional leaks after several iterations of testing and leak patching with vapor barrier tape and bituthene mastic by Tufts.

WFS/JDR:csh
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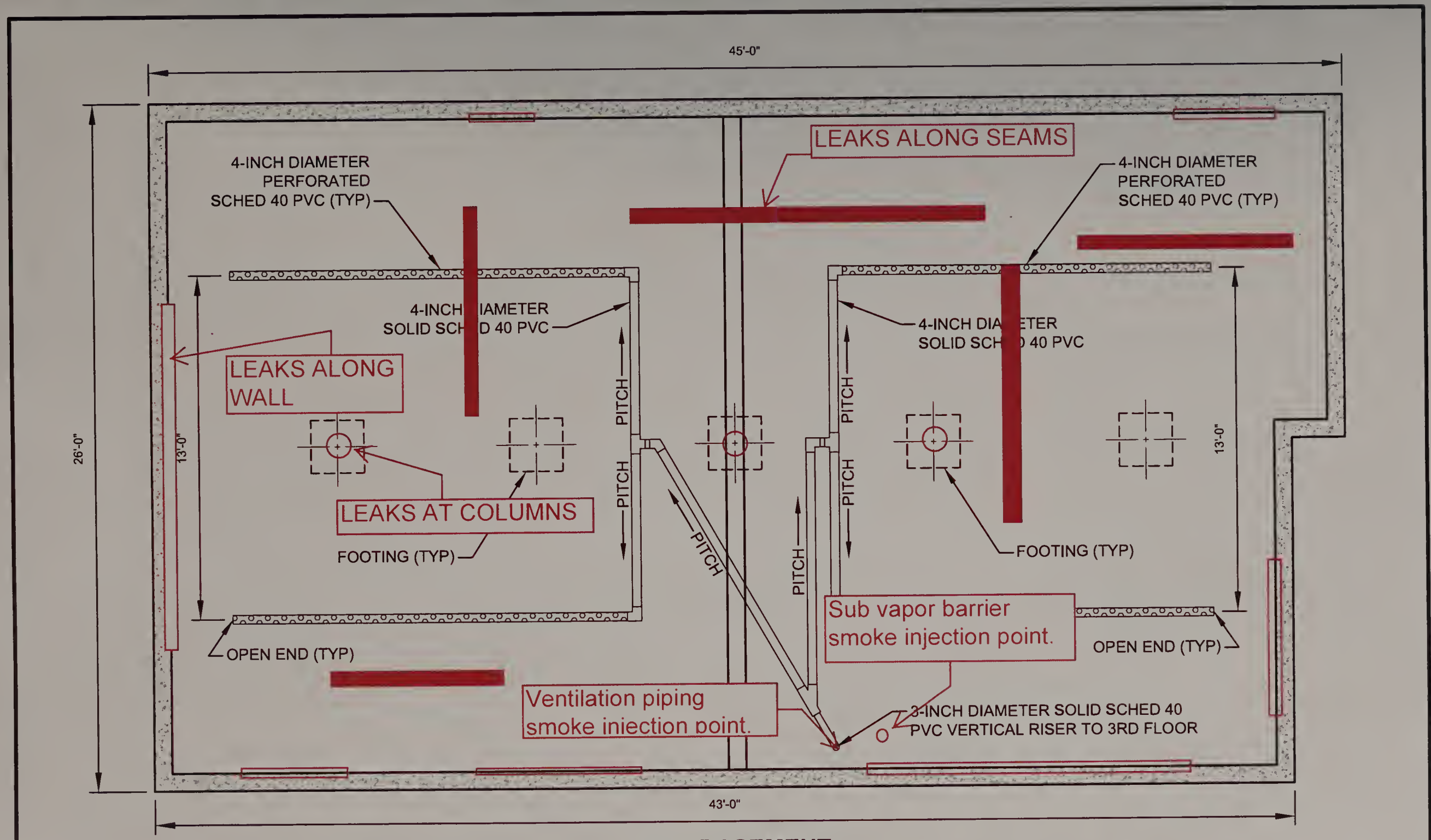

JAN. 29 & 30, 2014
Approximate location of observed leaks during smoke testing which were repaired.
Pinhole leaks not shown.

FULL BASEMENT

NOT TO SCALE

Release Abatement Measure (RAM) Plan 50 Tufts Street Somerville, Massachusetts	GEI Consultants	CONCEPTUAL VAPOR MITIGATION DESIGN 34 Knowlton Street
UniFirst Corporation Wilmington, Massachusetts	Project 04516-3	December 2013 Fig. 3

N:\04516\#Drafting\04516-3\Residential Vapor Mitigation\045163-RVM 34 Knowlton

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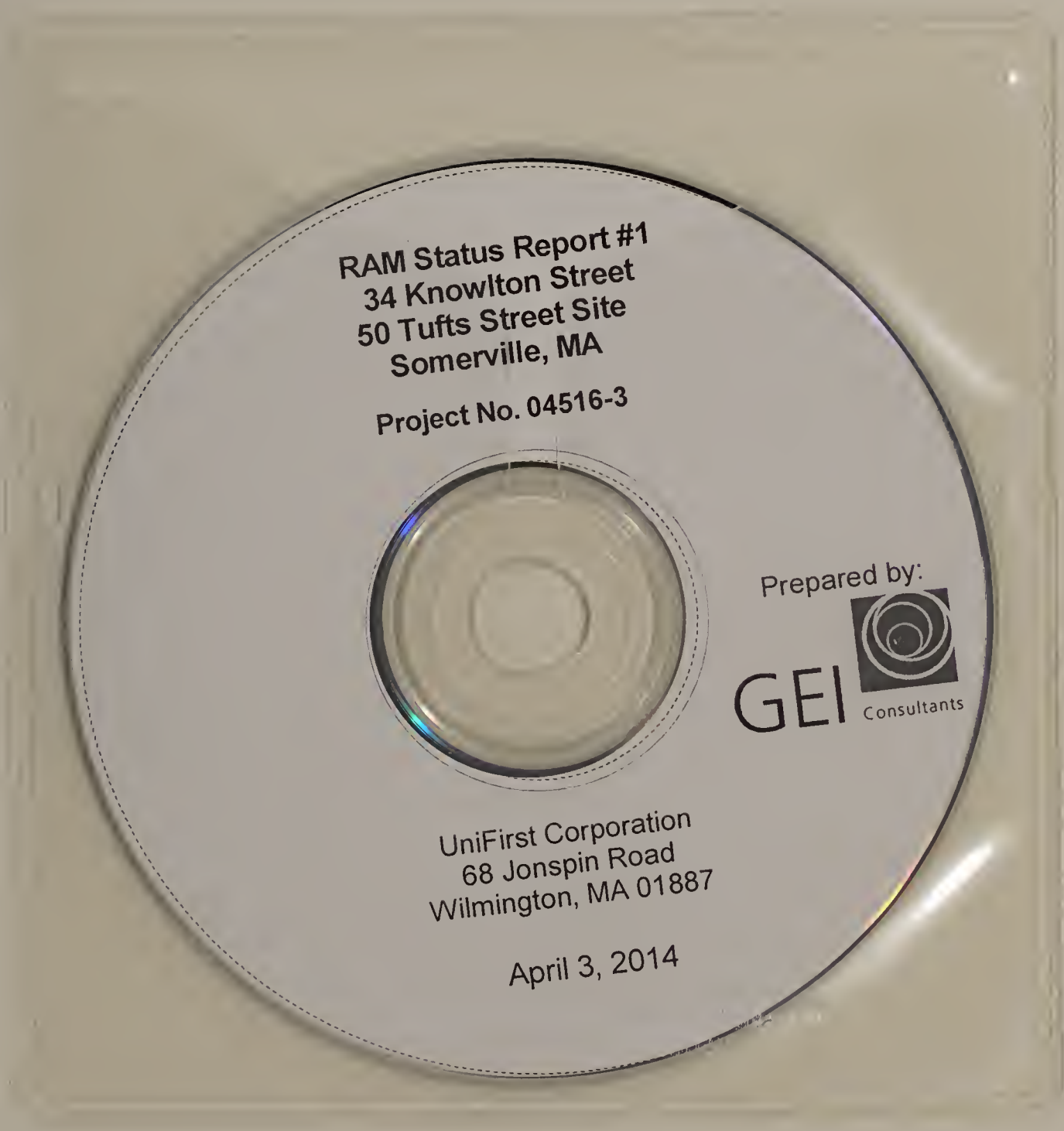

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